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Editorial

The Port of Dunkirk.

The Port of Dunkirk, which is situated in the north of France, in close proximity to the Belgium border, is to-day one of the best equipped ports in France, and this satisfactory state of affairs has chiefly been brought about by a far-thinking and progressive Chamber of Commerce, to whom we are indebted for their permission to publish the illustrated article on the Port of Dunkirk, which appears on another page. Dunkirk also forms the supplement for this month's issue.

Dunkirk was first known as a port in the year 1067, but in those days it was not a commercial port, being solely used as a fishing port, and it was not until the year 1331 that any trade of importance took place at Dunkirk. From this year onwards steady progress was maintained and trade was carried on with Spain, France, Scandinavia, Denmark, Norway, Sweden and England. It was not until the Seven Years' War that any construction works were undertaken at Dunkirk, when a sum of £600,000 was advanced for improving the working of the locks, repairing and remodelling the quays, and cutting a canal to the sea to ensure the discharge of inland waters.

From 1818 to 1826 further work was undertaken, the jetties being improved, the Bergues Lock repaired, and the Citadel Bridge rebuilt. After the completion of these improvements, a first-class lighthouse was erected, the jetties were lengthened by 280 metres, some of the timber wharves were replaced by masonry quays, and a new wet dock was also constructed.

In the year 1861 it was decided to carry out a more up-to-date programme of works which would enable Dunkirk to handle the steadily increasing traffic, and the sum of 15,000,000 frs. was set aside for this purpose. An Act was passed in 1879 for the undertaking of additional constructions at a cost of 50,000,000 frs., and at various intervals up to the present day further developments have been carried out which have gradually placed the Port of Dunkirk in a position to cope with the increasing trade which has taken place in recent years. This traffic, which had reached a total of 831,834 tons in 1870, increased during the next 20 years to 2,501,833 tons in 1890, to 3,163,197 tons in 1910, and in 1930 to 4,952,691 tons, and these figures serve to illustrate the necessity for the continual development of the Port of Dunkirk.

As mentioned previously, Dunkirk is considered one of the best equipped ports in France, and the mechanical facilities available for the handling of cargo are continually being brought up-to-date and added to. The Chamber of Commerce, who are responsible for the equipment of the Port, have made it their aim to reduce to a minimum the period of time occupied by vessels in the Port of Dunkirk, and the equipment available can handle every kind of cargo of any character or weight.

The Port of Dunkirk is not by any means at a standstill and further constructions are being undertaken at the present time with a view to further developing the port and attracting more tonnage, and this go-ahead policy of the Chamber of Commerce will undoubtedly prove beneficial to the Port of Dunkirk in the near future.

Increased Traffic at the Port of Montreal during 1932.

The annual report of the Montreal Harbour Commissioners for the year 1932 shows that the aggregate tonnage handled during the year was 10,745,325 tons, an increase of 830,964 tons as compared with 1931, the total having been exceeded only twice in the port's history, in 1927 and 1928.

Import tonnage achieved a new record total of 4,036,045 tons, an increase of 467,503 tons, whilst export tonnage amounting to 3,926,315 tons was 889,480 tons more than in 1931, being the highest total recorded since 1928. Ocean-going vessels numbering 1,274 arrived in Montreal last year, as compared with 1,150 in 1931. A total of 963 trans-Atlantic vessels reached the port last season, an increase of 152 during the year, and a record total since 1928. Arrivals of coasting ships numbered 311, a decrease of 28. The number of inland steamers reported inwards was 4,094, as against 4,000 in 1931.

British anthracite coal imports last year reached the record total of 1,118,287 tons, as compared with 359,253 tons in 1928. Imports of oil and gasoline totalled 1,571,856 tons, as compared with 960,906 tons in 1930.

Grain deliveries for the first time since 1928 exceeded 100 million bushels, last year's total being 112,893,600 bushels, an increase of 26 per cent. during the year. Montreal's grain shipments last year during its summer navigation season compare with 41,899,128 bushels for the twelve months at New York, 14,323,762 bushels at Galveston, and 7,129,222 bushels at Baltimore.

A recent report of the Vancouver Harbour Commissioners estimates total exports of grain at that port in 1932 at 105,006,925 bushels.

Manchester Ship Canal.

The monthly approximate traffic return of the Manchester Ship Canal Company for April indicates that the receipts from the main waterway were £6,123 more than in March and £3,359 more than in April last year, and for the second successive month they were also larger than in the corresponding month of 1931. Excluding the months of January, June and December, in which the receipts appear normally to be swollen by income from outside sources, the April figure was the highest for any month since November, 1931, when import trade was on an unusually large scale as a result of attempts to forestall the new duties which were being brought into operation. For the first four months of the year the receipts were £4,087 less than in the corresponding period of 1932 and £6,812 less than in 1931.

Port Charges at Hull.

Various measures are being taken to reduce port charges at Hull in order that it shall retain its reputation as a cheap port and thus be attractive to shipowners. Recently stevedoring tariffs have been considerably revised in a downward direction, mainly as a result of competition, and efforts to reduce pilotage dues have been partly successful. The Humber Pilotage Committee recommended a cut of 10 per cent., and the United Kingdom Chamber of Shipping pressed for 15 per cent., but the pilots, declining to fall into line, the matter was referred to the Board of Trade. The decision of the President over the inquiry is that there shall be a reduction of only 5 per cent. in the Humber and Goole pilotage charges, and a suggestion that the costs of running the pilot cutters should be overhauled.

Southampton's New Graving Dock Nearing Completion.

Southampton's new graving dock, which will be the largest in the world, is now rapidly nearing completion, and Southampton is looking forward with pleasure to the visit of the King, who will open the dock on July 26th. The honour is keenly appreciated and can be regarded as a compliment to the Southern Railway for their courage and enterprise in embarking on so extensive a scheme as the graving dock and docks extensions on the Western Shore in these times.

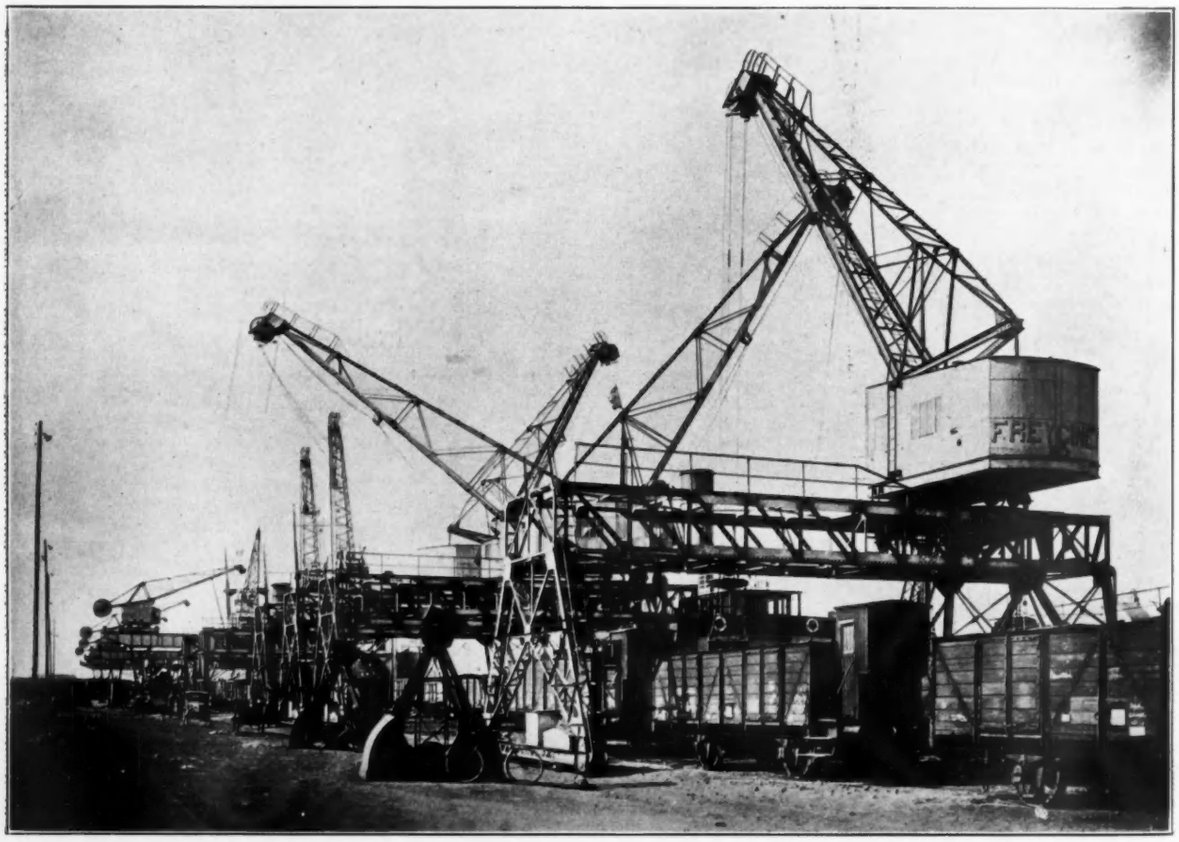
According to present arrangements, it is intended that the ceremony shall be at noon. The King will, most appropriately, arrive at the new docks by water, for he will sail up Southampton Water in the Royal yacht " Victoria and Albert."

Work on removing the embankment built as the first stage of the graving dock scheme has already been begun, and the fitting of the giant caisson will shortly be undertaken.

In connection with the reclamation of mudland at the back of the new quay wall of the dock extensions, it is interesting to note that about half the work of reclaiming the 400 acres has been completed, and more than 100 acres have been reclaimed up to the full height.

The Port of Dunkirk

Freycinet Quay No. 6.



Freycinet Quay No. 10.

The Port of Dunkirk

(Translated from the French)

The 11,000-ton Floating Dock.

Foreword

A MODERN commercial port may be regarded as an immense sorting station for traffic by land, sea and river, affording access on the one hand to shipping of the merchant fleet, and on the other hand wide open to the interior of the country, with which it must have ample and rapid means of communication.

It is at the same time a vast industrial establishment, in which is carried on unceasingly the handling of merchandise and raw materials of the most diverse kinds either for storage or in transit.

If the ship is an extension of the railway, the port is the connecting link between these two forms of transport, which have become indispensable elements in the prosperity of a country. Hence it follows that the economic value of a seaport is in direct ratio first with its ease of access from seaward and its connections landward and, secondly, the capacity of the mechanical equipment which it places at the service of its patrons for loading and discharging vessels.

From this double standpoint, Dunkirk enjoys a situation altogether privileged; on the seaward side its entrance channel opens directly upon a natural roadstead by which pass the great lines of international navigation, while for communication with the interior, in addition to trunk roads, three canals opening into the docks augment the extensive railway system of the North Railway Company; so that Dunkirk, being both sea-port and river-port, is thus doubly connected with the whole of France, Belgium, Germany, Switzerland and Italy.

Moreover, it is justly reckoned in the marine world as one of the best equipped ports in France, for, as will be seen in the following notes, its well-chosen handling machinery assures to shipping a speed of discharge which can hardly be equalled and has never been excelled in any other port.

Although it merited, even in ancient times, the proud title of "*Freti Gallici decus et securitas*," the Dunkirk of to-day is nothing like the natural haven of the old régime: it offers one of the most remarkable examples of the transformation imposed upon marine works by the introduction of steam in navigation and the speeding up of land transport by the advent of the railway. It is an entirely new establishment, whose construction—facilitated by the very nature of the soil—has been evolved to keep pace with modern needs, bearing relation throughout to the economic importance of the country served and to the dimensions of ships actually afloat.

Having to serve the most active and populous regions of France, the port must be equal to its task and to this end have been directed the efforts of the Chamber of Commerce, which for over two centuries has been proud to take the initiative in all the enlargements and modifications which have been effected.

Historical Review

The Port of Dunkirk does not owe its creation to chance. The whole region known as the Maritime Plain, a wide belt of land about 9 kilometres in depth, once occupied by the Menapians and later by the Romans, had been flooded afresh at the close of the fourth century by an inroad of the sea. A coastal barrier, formed by a series of small sandy islands like the fringe of an archipelago, formed a reef situated almost on the same line as the present shore. Behind this were lagoons and marshes covered twice a day by the tides. The plain had become an immense sedimentation tank: the bottom was slowly raised by the deposit of marine silt. The water ran off at low tide by channels terminating in small creeks, which later on gave rise to the ports of Gravelines, Dunkirk, Zuydcoote and Nieuport. When the district had become habitable, about the ninth century, man was able to settle there again. It was then that appeared, in the reclaimed plain, places with names ending in *Kerque* or *Cappelle*, and among them *Dunkerque*. Its first inhabitants dwelt at the inner end of a little natural haven, sheltered from the sea winds by a range of dunes. They took advantage of the favourable conditions provided by Nature, for all the waters from the interior converged in their harbour, which thus became a nucleus of regional traffic. Then in the course of the centuries these waters, being canalised, continued to keep it in communication with the hinterland, which could thus be economically served.

The name of Dunkirk appears for the first time in history on a map of Baldwin V., Count of Flanders, in 1067. The first seal of the town bears upon it simply a large flat fish, which fills the whole field. It is the emblem of the single industry of the inhabitants, for Dunkirk declared itself from the beginning as an important fishing port, to which merchant ships had not found their way. From the standpoint of commerce its name does not figure in any administrative transaction during the whole of the 12th and 13th centuries, whilst exchange took place freely between France and England by way of Damme and Bruges as great ports of transit.

In 1331, by reason of political changes affecting the locality, the importance of the port increased from day to day. The relations of Dunkirk with Spain developed: its harbour received many cargoes of wine from Bordeaux, goods from Scandinavia (timber from Denmark or Norway, iron from Sweden, etc.), also wool from England in fairly large quantities.

In 1406, for the protection of the town from hostile invasion it was surrounded by a new wall, which flanked the old harbour from the Leughenaer, which was the angle bastion of it, as far as the end of the Rue de Bergues, now the Rue de L'Amiral Ronarch. The trade of the port at that time was making continual progress. Great numbers of ships unloaded merchandise of the most varied description.

Unfortunately, this season of prosperity did not last very long: the intolerance and oppression of Philip II. drove the Flemings into revolt; the people of Dunkirk remained for a long time loyal to Spain, but the excesses of the Duke of Alva and of the bloody "tribunal of troubles" drew them into accord with the Dutch, and the town was for seven years under the rule of the United Provinces, until July 16th, 1584, when the Spaniards retook the citadel.

Philip II. did not deal severely with Dunkirk for its desertion, such action being in fact not uncommon in those days, and important works were carried out by his orders. The harbour was repaired and improved, the drainage sluices were put in good order, and commerce rapidly made a fresh start.

The Port of Dunkirk—continued

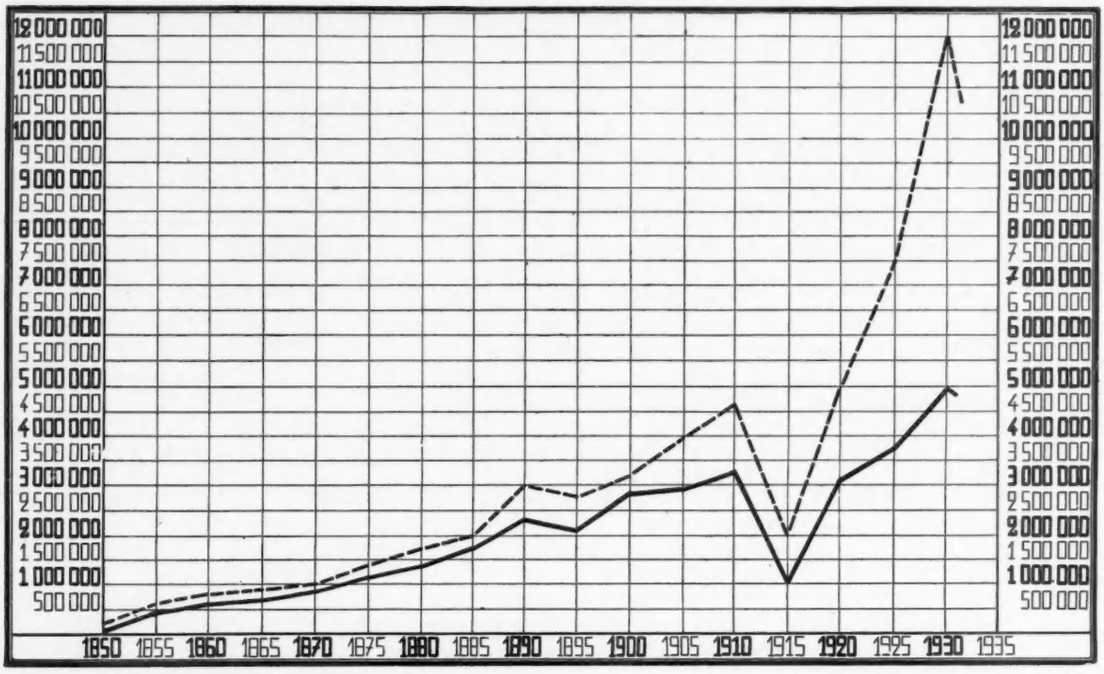
After being under the domination of different masters, Dunkirk reverted finally to France, when Louis XIV. bought it from England, on the 2nd December, 1662. He considered then, and quite rightly, that this acquisition formed one of the finest jewels in his crown, and he left nothing undone to ensure the development of the town and the port. This was endowed with its freedom and, in 1700, given an institution which in after events proved to be the leading cause of its prosperity, a Chamber of Commerce, one of the first to be given to any French town. The king accorded it, moreover, a series of other privileges, and as at that time the main obstacle to the rise of commerce was still the want of security, the fortifications were renewed and considerably extended by Vauban. The channel was carried out to deep water in the roads: it led in to the Admiralty wet dock, whose dimensions, small indeed though they were, aroused admiration at that time.

A real improvement, however, followed the declaration by Louis XVI. of war with England in support of the American colonies which were striving for their independence. New letters patent in 1784 confirm the freedom of the port, which benefited greatly by this measure. Thus, on the eve of the Revolution, the prosperity of Dunkirk raised it to the front rank in the commercial world.

The revolutionary upheaval dispersed again the results so laboriously gained. This period was so much the more deplorable for the Port of Dunkirk because the Convention annulled the grants of freedom which had enabled it to strive towards development, against adverse circumstances; also because, under the first Empire, Napoleon having by conquest made Antwerp French, concentrated his efforts upon that port.

Contrariwise, the Restoration, which fostered great activity in public works, watched with solicitude over the affairs of

Diagram of Shipping and Trade of the Port.



— -- — — — *Tonnage of Shipping.* ——— *Goods Traffic, in metric tons.*

Unhappily, by the Treaty of Utrecht, the English, uneasy and envious, insisted upon crippling the port by the formation of a dam across the haven, two-thirds of the way in, which did not fail soon to bring about its complete obstruction by sand. This dam was fortunately destroyed in 1720 by a violent storm.

The town enjoyed another period of prosperity from 1720 to 1744. By letters patent Dunkirk had received from Louis XV. the privilege of trading with the West Indian Islands, where boats sailed which, although called "frigates," were rated at no more than 60 to 70 tons, and for which, therefore, the dimensions of the basins were adequate.

After the peace of Aix-la-Chapelle, commerce expanded more rapidly; ships carried, to Martinique and Dominica in particular, cloth, calico, silks, bricks, pottery, tiles, tools and furniture; while Colonial produce—sugar, indigo, coffee, cocoa, cotton, rum—made up return freights; and it must be added that the slave trade, to which the sailors lent themselves as a side line, also brought in considerable profit.

Then came the Seven Years' War, during which, for the first time, construction works were undertaken at Dunkirk with funds provided by subscription from the mercantile community, which, of course, stood to gain by the betterment effected. Merchants advanced £600,000 to the Government, under the guarantee of the Chamber of Commerce. This money was employed in improving the working of the locks, repairing and remodelling the quays, and cutting the Cunette Canal to assure the discharge to the sea of the inland waters. The upkeep of the entrance channel was an object of especial care; it was deepened to 14 or 16 feet, rendering it available for frigates of 36 to 44 guns.

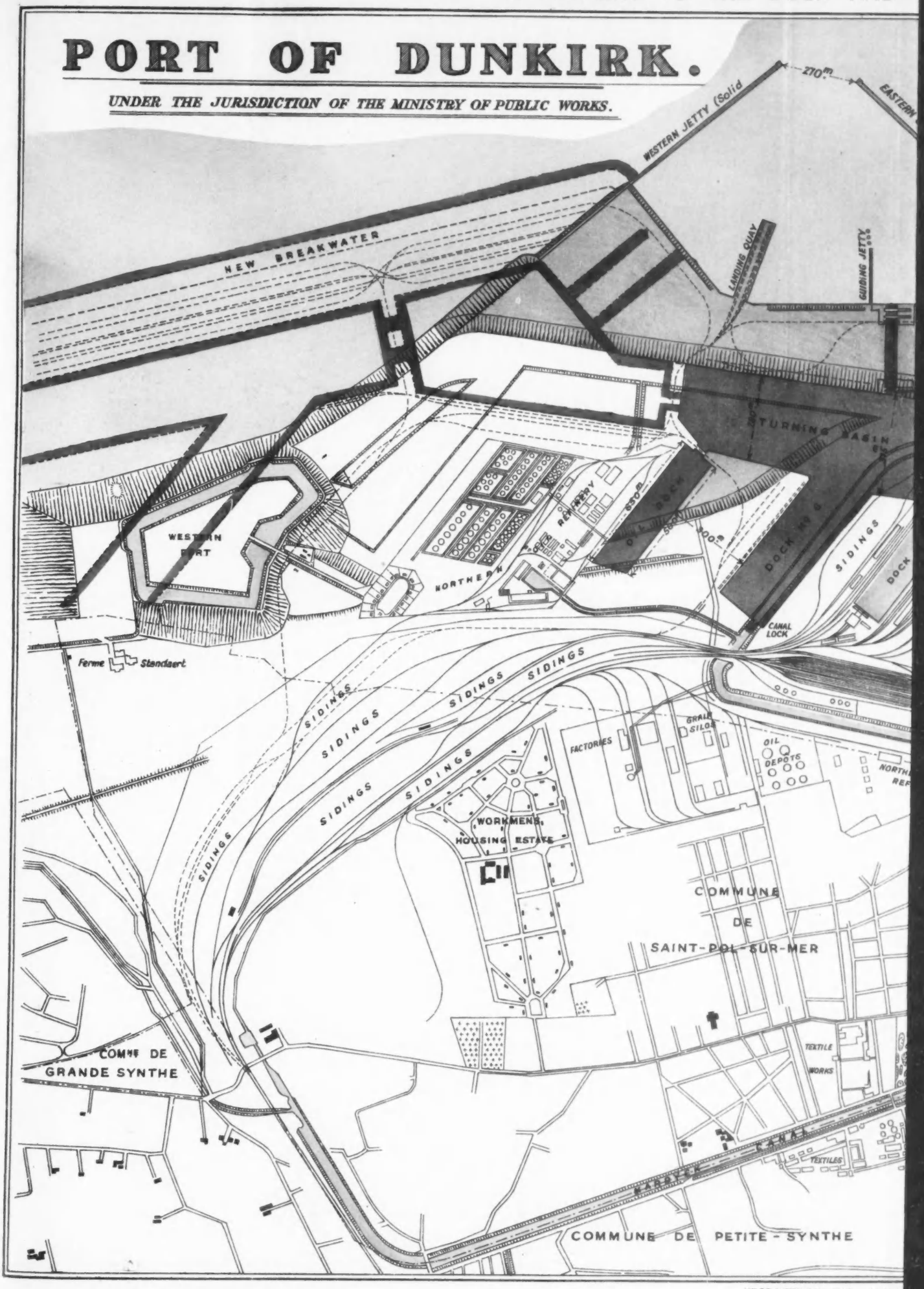
Still the era of final prosperity had not yet arrived, and at the making of peace the treaty of Paris required the port to be put back into the condition prescribed in previous treaties. Thus all the effort made and all the money spent had been in vain, and the port, after those few years of thriving trade, was thrown back into the lamentable condition in which the last war had left it.

Dunkirk. Further, the loss of Antwerp restored to Dunkirk its full geographical importance, from the strategical and military as well as from the maritime and commercial standpoints, the neutrality of Belgium dating only from 1830.

Work was begun at once. From 1818 to 1826 the jetties were improved, the Bergues lock was repaired, the Citadel Bridge rebuilt. The harbour then had the same area as under Louis XIV. To deepen it, a vast sluicing basin was made. The first stone was laid on September 21st, 1823. Gradually the port took on greater activity, although all endeavour to restore its freedom had failed. In 1820 there were registered 1,449 vessels entering and leaving, having a total tonnage of 105,968; in 1830 these figures had risen to 2,557 vessels and 175,014 tons.

Louis Philippe continued the same protection as his predecessor. A first-class lighthouse was erected, the jetties were lengthened by 280 metres, a certain length of timber wharves was replaced by masonry quays, a considerable part of the old harbour wall which still stood was pulled down. A new wet dock was considered indispensable. The enactment of July 16th, 1845, prescribed the transformation of the old tidal grounding basin into a new enclosed wet dock which took the name of Commercial Dock. At the close of that year the movements of vessels in and out amounted to 2,867, the total tonnage being 250,000 tons. Before enclosing the dock it had been necessary to dig a diversion canal leading to the sea. The opening of the railway in 1848 gave an unexpected impetus to the development of the port, which in 1850 received 3,999 vessels registering altogether 310,277 tons. From that time onwards its rise in importance steadily continued

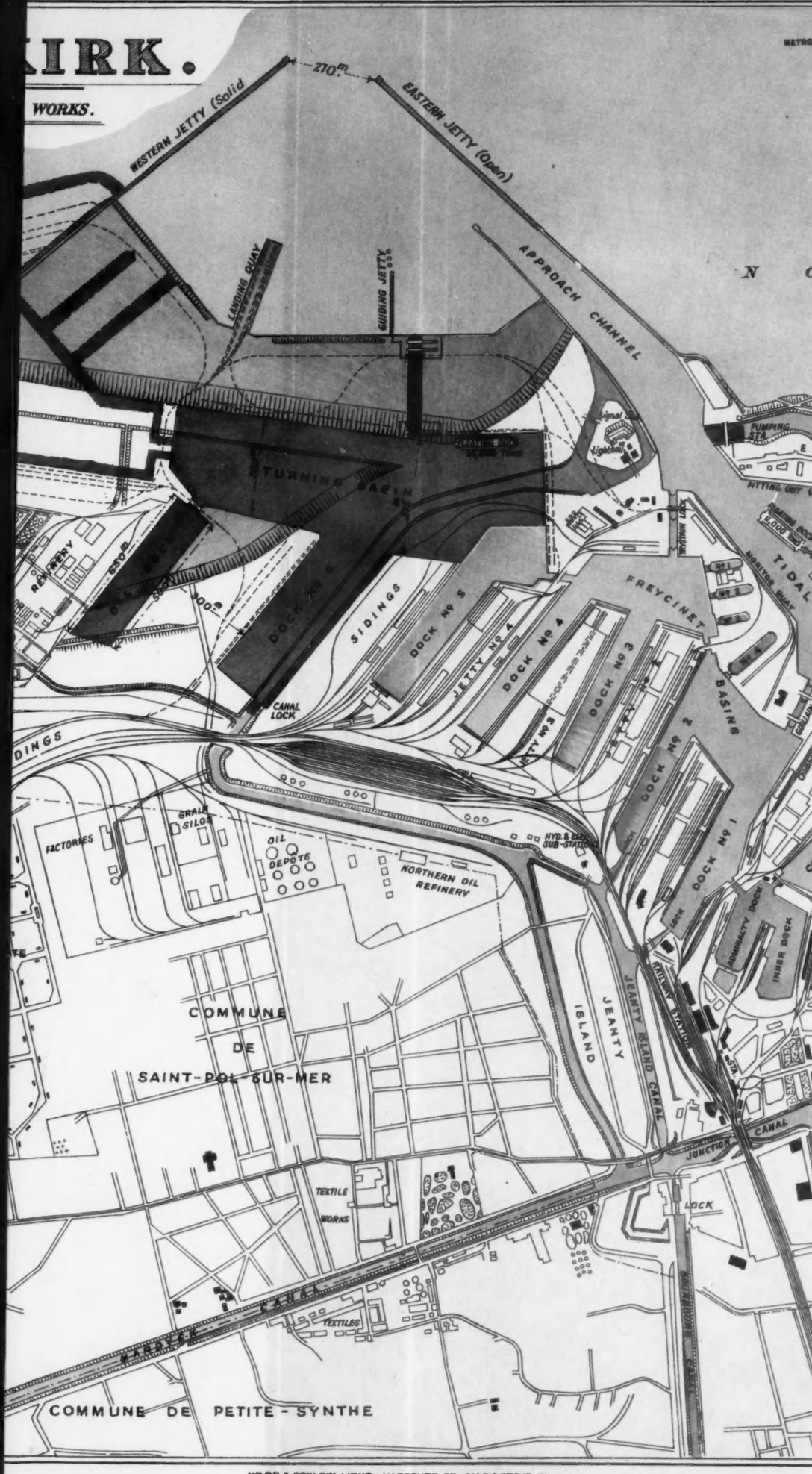
At the beginning of the second empire the works authorised by the Act of 1845 were not finished before their inadequacy was already apparent. From 1848 to 1860 the tonnage had increased from 217,926 to 561,515 tons. Further extensions had to be faced. A decree of July 14th, 1861, set out a full programme. A new wet dock, provided with an entrance lock 21 metres wide, was to be built on the site of the western fortifications. The



WARD & FOXLOW, LITHO HARCOUR

KIRK.

WORKS.



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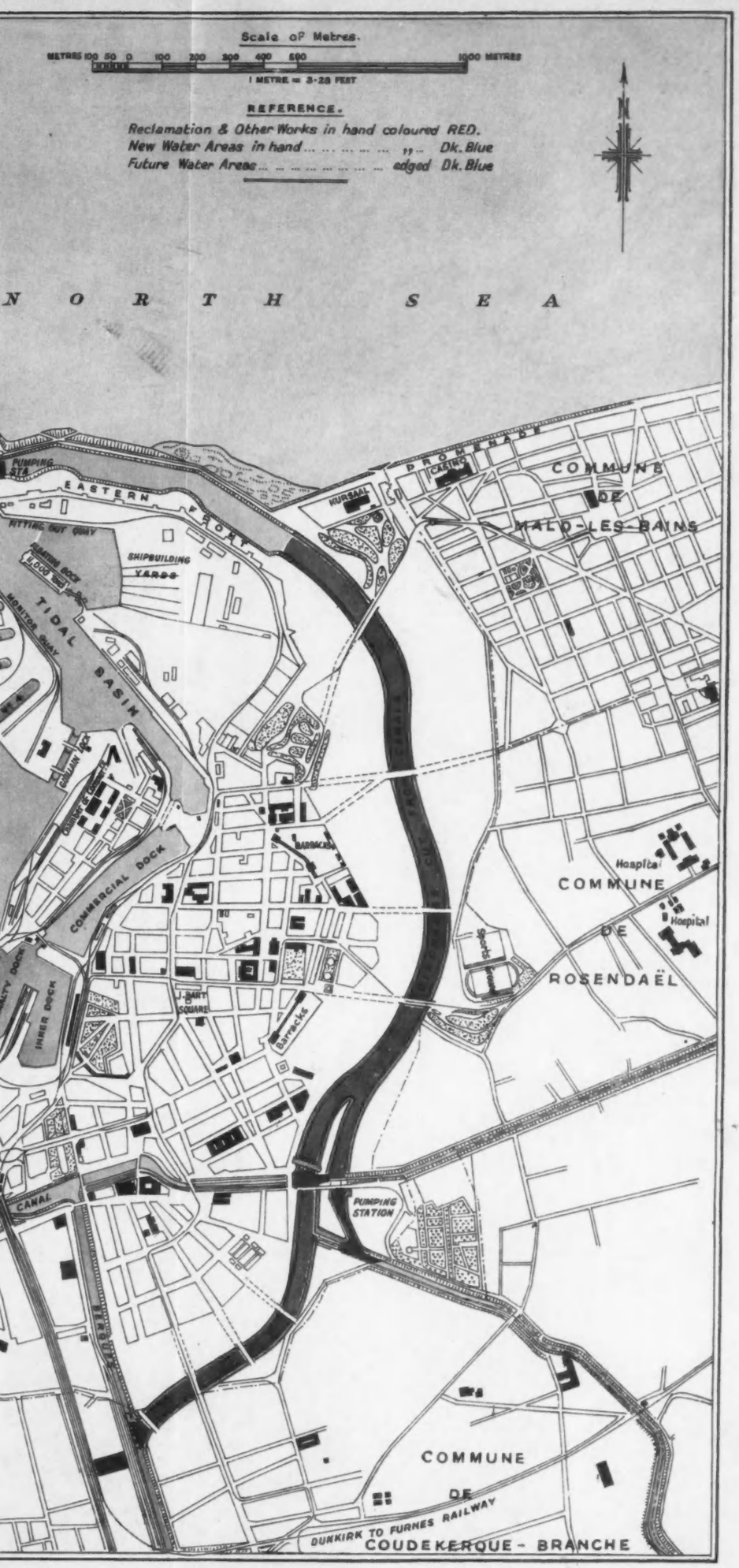
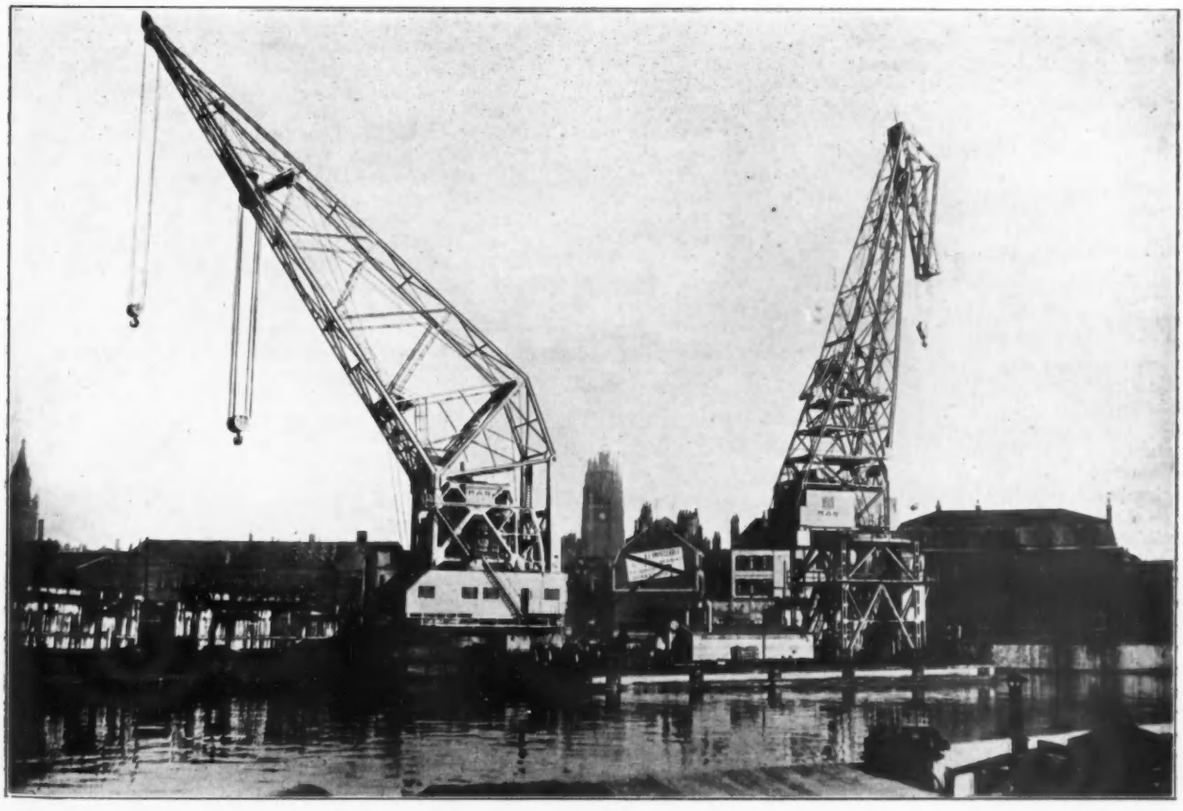

Scale of Metres.
METRES 100 50 0 100 200 300 400 500 1000 METRES
1 METRE = 3·28 FEET
REFERENCE.
Reclamation & Other Works in hand coloured RED.
New Water Areas in hand ... ... ,, ... Dk. Blue
Future Water Areas ... ... edged Dk. Blue
N
N O R T H S E A
PUMPING STA.
EASTERN
FRONT
FITTING OUT QUAY
SHIPBUILDING YARDS
TIDAL BASIN
MONITOR QUAY
COMMERCIAL DOCK
INNER DOCK
CANAL
KURSAAL
CASINO
PROMENADE
COMMUNE DE MALO-LES-BAINS
BARRACKS
CUT
Hospital
COMMUNE DE ROSENDAËL
Sports
J. BART SQUARE
Barracks
PUMPING STATION
COMMUNE DE
DUNKIRK TO FURNES RAILWAY
COUDEKERQUE - BRANCHE

The Port of Dunkirk

Photo] *View of Part of the Port.* [Cayez, Dunkirk



Photo] *Floating Cranes of 120-tons and 20-tons capacity.* [Cayez, Dunkirk

The Port of Dunkirk—continued

ramparts were to be removed to beyond the sluicing basin. Fifteen million francs were to be appropriated to these works, and they were at once begun. At the same time the roadstead, better buoyed, was provided with a lightship, which was brought into use on November 15th, 1863. The approach to the port was rendered much easier.

In 1867 Napoleon III., during a visit to Dunkirk, could observe the progress made since the beginning of his reign. In that year the trade of the port attained the figure of 879,971 tons. But the Government could only allot 500,000 francs a year to prosecute the work. The Town Council and the Chamber of Commerce together offered to advanced the 12 millions still required.

The Act of May 20th, 1868, authorised the town to collect a tonnage due on all ships entering the port, which enabled it to lend the 12 millions to the State. The fortification on the Eastern sea front were to be brought to the same level as those on the West.

The war of 1870, bringing into prominence the importance of Dunkirk, equally as a maritime storage base, as a commercial centre, and as a strategic vantage point, led to the completion of the harbour works and to modification of the 1861 programme. Dunkirk realised during the war year a special access of prosperity, owing to the fact that it was the principal revictualling centre of the Faidherbe Army and that steamship services were multiplied to make up for the interruption of traffic by land. These services were not terminated afterwards, and if the first of these causes of enrichment passed away with the end of the war, the second persisted and had lasting results. For the year 1871, 6,728 ships entered and left, carrying in all 1,149,144 tons of cargo.

The following years brought about some small slackening, notwithstanding the need of the country to renew its stocks of raw materials and of manufactured goods used up in the war. Yet the anticipation of commercial treaties expiring and the fear that they might not be removed increased the volume of imports and enabled the sea-borne trade to avoid a diminution due to cessation of the exceptional demands of war. Thus the statistics of 1873 show 6,386 vessels in and out, with 1,313,003 goods tons, and customs duties reaching the sum of 4,964,438 francs, these figures comparing well with those of 1871. Thanks to the deepening of the channel, in the ten years from 1863 to 1873 the average tonnage of the vessels engaged rose from 117 to 203 tons. Then, on December 14th, 1875, two Acts were passed allotting to the Port of Dunkirk a sum of 18 millions francs, 6 millions for improvements and 12 millions for new extensions. In order to raise the money required for completion of the work in 6 years, the town was authorised to float a loan of 12,600,000 francs, secured by a tonnage due of 30 centimes per ton on every vessel entering the port to discharge or to load.

Yet the work progressed very slowly. A further allocation was needed to enable them to be carried on. The old port then found itself in difficulty.

The state of affairs caused great loss of time and money in the prosecution of trade. This came under the observation of M. de Freycinet, at that time Minister of Public Works, during a journey he took in 1878. Recognising the importance of Dunkirk as the port most favourably placed for contesting with Antwerp the supremacy of the North Sea, he said: " The question of Dunkirk extends beyond the limits of the town, beyond the limits of the department, and is for us a question for France." The Act of July 31st, 1879, secured through the urgent entreaty and negotiation of Mons. J. B. Trystram, then a member of Parliament and President of the Chamber of Commerce, finally brought about a solution of this deplorable situation. This Act, of major importance, declared the necessary works to be of " public utility " and put the cost at 50 million francs. It took note of the undertaking by the Town Council together with the Chamber of Commerce to contribute to this expenditure to the extent of 15 per cent.

The work was carried on from that time without interruption, simultaneously with the widening and deepening of the entrance channel. A decree of 1888 had empowered the Chamber to administer the general mechanical quayside equipment, which was gradually developed as the port increased in importance.

Trade continued to expand; from 831,834 goods tons in 1870 it rose to 2,501,833 in 1890 and to 3,163,197 tons in 1910.

The port, having again become too restricted, was again enlarged, and the Act of February 3rd, 1910, sanctioned the construction of a fifth dock, which was completed in 1916 during the war.

Awaiting the early accomplishment of yet further enlargements now in progress, upon a noble scale, the port is experiencing improvement from day to day in its equipment. The description of this development will follow.

And so the little fishing port lying between Nieuport and Gravelines, as described in the geography books of 50 years ago, is transformed into a great maritime establishment, served by numerous steamship lines linking it with every part of the globe. It has become not only a commercial but a passenger port. The small boats of other days, mere nutshells, have given place in the docks to great cargo vessels of many thousands of tons. The cod-fishing industry, once so flourishing, and for which more than a hundred smacks were equipped in 1890, has migrated to Gravelines or other smaller ports. Dunkirk, port of the North and of the Eastern Marches, has now the task of serving rich industrial areas. The field of its activity is extending, and every hope of prosperity may be entertained.

Administration

Dunkirk, not being an independent port, is governed by the Act of June 12th, 1920, and administered in accordance with the terms of a decree of April 7th, 1924, that is to say that all services dependent upon the Ministry of Public Works are put under the control of a director, chosen among the Engineers-in-Chief of the Roads and Bridges Department (" Ponts et Chaussées "), assisted by a chief engineer for operation and maintenance and engineers occupied exclusively on new works.

The Engineer-in-Chief and his assistants are advised by a Consultative Commission and by a Permanent Commission of Enquiry, whose members, nominated by the Prefect, comprise several representatives of the Chamber of Commerce, one member of the Municipal Council, one member of the General Council of the Department and several persons chosen from among the principal users of the port.

These Commissions must be consulted upon every matter relating to the operation, the maintenance or the improvement of the port and of its equipment.

Chamber of Commerce

Owing to a true appreciation of past services rendered by Chambers of Commerce, their official collaboration has been sought, in recent legislation, by according to their members the most important share in the constitution of Administrative Commissions. This is a wise measure, because certain ports—and Dunkirk is among them—are in fact the creation of their Chamber of Commerce, which before the inception of an official organisation has not only taken the initiative in improvements, but further has provided the State with the financial help required for their execution.

Established by Royal decree of February, 1700, the Dunkirk Chamber of Commerce is the oldest of such bodies in France, excepting that of Marseilles.

Its mission, carefully defined by the constituent decree, was " to foster the trade of Dunkirk, to maintain the credit of traders, to prevent abuses and disorders, and generally to consider everything that might benefit and increase commerce, both within and without the kingdom."

Being thus put in charge, from its first inception, of the interests of the town and the port, the Chamber of Commerce has never failed for 230 years to sustain with tireless solicitude the rights and privileges of the merchants. In the stern and ceaseless struggle which went on, under the old régime, for defence of the freedom of the port, it was always to the fore; when the onerous terms of the Treaty of Utrecht were passed, it was owing to the constant and repeated efforts of the Chamber that the port was saved from complete and final extinction. Later, in 1787, when circumstances were more favourable, the Chamber lent to the State the sum of £600,000, which was required for the reconstitution of the port.

Upon the introduction of railways, again it was the Chamber which, after combating an almost unanimous scepticism, succeeded in obtaining the establishment of the first line connecting Paris with the sea coast by way of Lille and Dunkirk.

It is to the Chamber also that belongs the honour of the conception and execution of the " Freycinet " scheme and the subsequent extensions, which have endowed France with the magnificent maritime establishment described in this paper.

Description of the Port

Approaches, Lighting, Buoying.

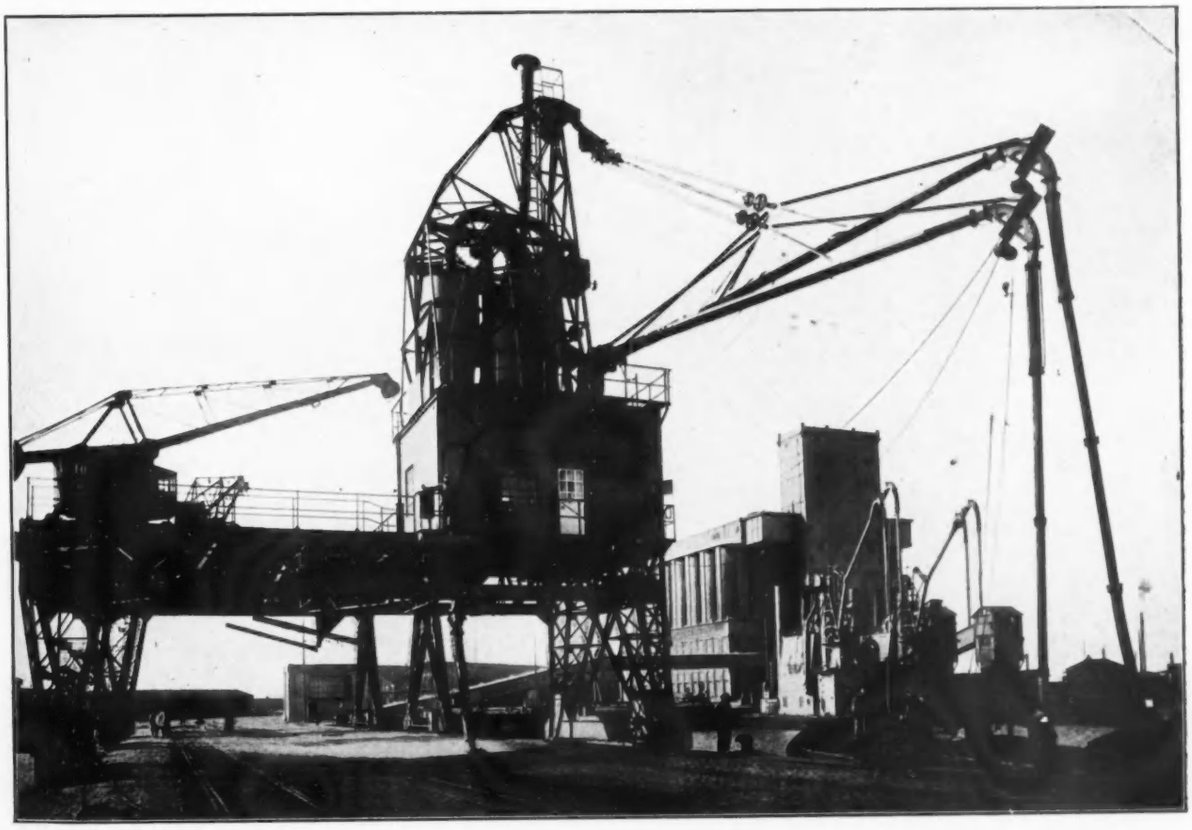
The Dunkirk roads lie parallel with the coast, extending from the western end of the " Snouw " Bank for a length of 20 kilometres nearly to the Belgian frontier. Their effective width varies from 600 to 1,500 metres, and their depth at low water from 12 to 20 metres. The sandy bottom gives excellent anchorage.

Being sheltered to a large extent by sand banks—the Flanders Banks—the Dunkirk roadstead is reckoned amongst the safest on the coast. The banks, channels and roadstead are marked by two lightships and 35 buoys, of which 20 are illuminated.

Vessels enter the roads by two channels, at either end, one the West Channel and the other the Zuydcoote Channel, the

The Port of Dunkirk

Photo] *No. 4 Dry Dock and its Tower Crane.* [Cayez, Dunkirk



Photo] *Pneumatic Conveyors, on Quay and Afloat, and Grain Elevators.* [Cayez, Dunkirk

The Port of Dunkirk—continued

latter being increasingly used by ships of every tonnage passing to or from the ports of Eastern Europe. Navigators from the West pick up the lightship " Dyck," placed at the entrance to the West Channel, where the Dunkirk pilot boats are cruising. Ships coming from the North pass the lightship " Ruytingen," and thence *via* the Ruytingen Channel and the " Dyck " into the West Channel. Those from the East pass by the whistling lighted buoy at the Nieuport Bank and through the Zuydcoote Channel.

The lightships are equipped with foghorns and are being fitted with " radio-phares."

The lighting system is completed by four main lights: (1) The lighthouse, a circular tower erected in 1843, near the main entrance lock. This light has its focal plane at 59 metres above high-water level and its range is 20 miles. It is an occulting electric light of the first class. (2) A white fixed light of the fifth class at the head of the West Jetty. This has a range of 9 miles and, by successive flashes of red and green light, signals the depth of water in the entrance. (3) A red fixed light of the fourth order, at the head of the East Jetty, with a 3-mile range. (4) A white fixed light of the fourth order, with a 12-mile range, on a tower at Leughenaer. This is intended to light the entrance channel, on the axis of which it is placed.

Harbour Entrance: The Channel.

From the roadstead, vessels enter the harbour by a channel which, on account of prevailing winds from west-north-west, has been aligned in that direction to facilitate their entrance. The width of this channel varies from 135 to 210 metres, its length is 950 metres, and its depths below datum of charts is maintained between 4½ and 5½ metres, which ensures a depth of water of 11 to 12 metres at high tide and permits the entry of nearly every ship of deep draft.

The channel passes between two jetties of timber and of stone, the longer of which, on the West, protects it against sand accretion. This jetty has a tide-signal at its head, indicating by display of balls the depth of water in the channel.

The Outer Harbour.

Extending inwards from the entrance channel lies a basin in which vessels take the ground on the fall of the tide. This is bounded by pitched banks, camp-shedding and stone or timber quays, of which the length available for shipping is 2,017 metres.

The Locks.

Vessels can pass from the outer harbour to the wet docks by way of two entrance locks of the following dimensions, viz. :—

	Trystram Lock	Guillain Lock
Effective Length between Gates	161·70	117·00
Width	25·00	21·00
Depth at high water, Springs	10·90	7·45
Depth at high water, Neaps	9·90	6·45
Level of Sills	—5·00	—1·55

The locks are operated at every tide, by day or night, between two hours before and three hours after high water.

The Trystram Lock, which was, when constructed, one of the largest works of the kind, was opened in 1896 and named after M. J. B. Trystram, Past President of the Chamber of Commerce, who in his time (1875-1884) devoted all his energies to the development of the port.

The lock has two compartments, 107 metres and 70 metres long respectively, and is provided with four capstans. The operation of these capstans and of the gates, panstocks, etc., is effected by hydraulic power. The total cost of this fine lock amounted to 9½ million francs, then equivalent to nearly £400,000.

The Guillain Lock, formerly called the West Lock, opened in 1880, is similarly provided with hydraulic capstans and gives direct access to the Freycinet Docks Nos. 1 and 2.

Wet Docks.

The wet docks fall into two groups, on the one hand those of the old port—the Commercial, Admiralty and Inner Docks; and on the other hand those of the new port—the Freycinet Docks. The latter have five branches. Both groups have the same water level, being connected by a passage between the Admiralty Docks and the Freycinet Dock No. 1. The present aggregate water area of all the wet docks amounts to 73 hectares, or 180 acres, of which the old docks measure 12 hectares, or 30 acres.

Quays and Railways.

All the docks have vertical stone retaining walls to the quays, and these are equipped with railway lines, connected, *via* the maritime station and the sorting sidings, with the system of the Northern Railway Company. This arrangement enables full trains to be made up in close proximity to cargo vessels, whose loading or discharging can thus be effected directly from wagon to hold or vice versa.

The total length of quays is over 12,000 metres, or 7½ miles, and that of the railways over 218,000 metres, or 136 miles. Facilities for despatch enable nearly 4,000 wagons to go out daily. The ordinary goods service alone, in 1931, handled 3,770,745 tons of merchandise, amounting to 78 per cent. of the general traffic of the port.

Dumping Grounds.

Enormous areas of solid-filled ground, lying between the docks and near the quays, are available for the storage or temporary deposit of goods. These grounds have a total area of 95 hectares, or 235 acres, and an estimated storage capacity of 100,000 tons of goods.

The Chamber of Commerce has also the control of other lands, to which they are adding the Isle of Jeanty, offering 14 hectares (35 acres) for industrial development, with access to docks, canal and railway.

Barge Dock and Inland Navigation.

Near the wet docks for ocean-going vessels there lies a river port, in which converge the three principal waterways connecting Dunkirk with its hinterland, Belgium, Northern France and Eastern France, as far as Rheims, Paris, Nancy, Strasburg and the Rhine.

This river port is formed by the Isle of Jeanty Canal, in which barges lie before or after entering the wet docks. Surrounded by quay walls, behind which lie extensive storage dumps, the barge dock measures 850 metres in length and 40 metres in width.

Communication with the main docks is by means of two locks at the ends of branch docks Nos. 1 and 2; whilst, by way of Junction Canal, the Isle of Jeanty Canal or Basin communicates with the canals of Furnes, Bergues and Bourbourg.

As an indication of the volume of inland water-borne traffic, it may be observed that during 1931 no less than 7,507 barges, registering 2,554,127 tons and carrying 774,436 tons of goods, passed through the locks connecting the canals with the main docks.

Equipment

In commercial ports it is customary to describe as Public Equipment (" Outillage public ") all those services, organisations, appliances and machinery requisite for the exploitation of the port, which have been entrusted by decree to public utility undertakers, and which must be put by the latter at the disposal of the public on approved conditions and at scales of charges regularly standardised.

By decree of 28th August, 1888, the concession for the equipment of the Port of Dunkirk was accorded to the Chamber of Commerce. Rightly regarding the quick turn-round of ships as a matter of primary importance, the Chamber has always aimed at reducing to a minimum their stay in port by placing at their disposal every facility necessary to enable them to land or load, safely, cheaply and speedily, every kind of cargo of whatever character or weight it may be.

The equipment comprises:—

Quayside Mechanical Handling Plant.—Electric and hydraulic travelling cranes, transporters, grain elevators, capstans, pilers, etc.

Electric Sub-stations.—For distributing and transforming current for power.

Floating Plant.—Floating cranes, including one of 120-ton lift; grain conveyors.

Stores and Sheds.

Warehouses.—Customs houses, sugar and wool warehouses, cold stores.

Graving docks, four in number.

A floating dock, of 12,000-ton capacity.

A slipway.

A gridiron.

Floating booms and pumping stations for petroleum.

Distribution system, for electric light and minor power current.

Fire-fighting and salvage service, with full-time staff.

A radio station for transmission and reception.

A storage ground, called " Noortgracht," served by railway and canal.

The Chamber of Commerce also administers or subsidises a watching service, patrolling the docks day and night; a public library; a museum, commercial and marine; public courses of study, in foreign languages, professional subjects and navigation.

(continued on page 243)

Notes from the North

Isle of Man Dredging.

THE dredger "Hurn," belonging to the James Dredging Towage Co., of Southampton, has returned to the Isle of Man and has resumed work off the partially-extended Douglas Red Pier. A similar vessel, the "Garvogue," has been similarly engaged for three summers. One of the same company's rock-breakers, which has been lying at the Tongue all winter, is also in action again. The only dredging which remains to be done relates to a portion of rock in the south-western extremity of the area to be filled in, and that will be completed this summer. A certain amount of walling will be proceeded with, and cement blocks are still being manufactured in the Harbour Board's yard on the South Quay. About one-third of the walling, which is to extend for 460-ft., has been erected so far, and the job is still estimated to last two years. Over a thousand 15-ton blocks have already been built up. More than half of the viaduct between the Victoria Pier and the Red Pier, about 200-ft., has been erected, and it is intended to have the viaduct completed in the summer of 1934.

New Ellesmere Port Dock Gate.

Messrs. W. J. Yarwood and Sons, Ltd., Northwich, have just completed a craft of novel character of dimensions 180-ft. by 16-ft. 6-in. by 7-ft. 9-in. The boom or gate is to be used to shut off from the main canal the new dock which has been built at Ellesmere Port. The dock is to be used for the discharging of ocean-going oil tanker ships, and should such an event take place as a serious oil leakage and probably a fire, the oil surface of the same would be under a measure of control and thus render the main canal immune from the possibility of the oil finding its way to its surface. The form of the structure consists of two longitudinal timber girders. The girders are built up of solid baulks of timber four wide and ten deep, and separated from each other with a water space which is filled in with steel tanks to act as a buoyancy reserve. The underwater portion of the structure is built of soft woods, whereas the part of the structure above water is built of a very hard, dense Australian gum wood, which is practically impervious to fire. The launching procedure of this structure was a unique layout, the whole system of what is known in the carpenters' trade as wedging up was entirely displaced with; the actual launching from the beginning of the launching operations to the craft taking the water was exactly six minutes.

Bromborough Dock Progress.

Speaking at the annual meeting of shareholders of Lever Bros. at Port Sunlight, Mr. Francis D'Arcy (the chairman) said that progress was made during the year in the utilisation of the Bromborough Dock; 221,320 tons of cargo were dealt with by both overseas and coastal vessels, as against 116,744 tons in the preceding year, when the dock was open for some ten months. The firm had been gratified to receive many complimentary remarks by shipowners and ships' officers regarding the rapid and efficient discharge of vessels in the dock. Consequent upon the establishment of the dock and because of the many changes in transport conditions that had taken place over the last few years, they had been undertaking a complete review of all their traffic arrangements throughout the country and hoped shortly to complete a general plan that would make the best possible use of the facilities that were available by water, road and rail. During the past year alone, on the traffic from Port Sunlight and Liverpool they had made a saving in transport of over £25,000.

Bidston Dock, Birkenhead.

Having taken three years to construct, the new Bidston Moss Dock, Birkenhead, was officially opened recently, followed by a celebration luncheon in the Birkenhead Town Hall, where the Mayor of the borough entertained a large company, consisting of the chairman and members of the Mersey Docks and Harbour Board and representatives of all the leading port interests.

The new dock is on the site of the remaining portion of Wallasey Pool, which is now practically non-existent. Although small compared with the West Float's 58 acres of water space, which it joins by a 100-ft. passage at Poulton Penny Bridge, it will play an important part in providing further facilities for shipping. It has a water area of 11 acres, but there is space for the dock to be extended to more than double its present size. It is 1,000-ft. in length with a uniform width of 400-ft. In the original scheme it was to be 500-ft. wide and about 2,500-ft. long, but when the Government economy proposals were advanced the size of the dock was reduced, bringing the cost from £913,188 to about £708,000. At the north-west end is a huge ramp which can be removed when the dock is extended. The minimum depth of water is 30-ft.

There are two quays at the east end of the dock suitable for small craft. About 87 acres are available for sheds, factories and mills, with good railway facilities. The new dock is only a short distance from the entrance to the new Mersey traffic tunnel.

Bidston Dock marks the completion for the present of the modernisation of the Birkenhead dock system, which the Mersey Docks and Harbour Board has been carrying out for more than ten years at a cost of millions of pounds.

In 1928, after five years' work, the main entrance to the docks—the Alfred Dock entrance—was re-opened after being deepened and widened to permit the largest vessels using the Suez Canal to leave port with full cargoes. This, together with alterations to the inner entrances, cost over £1,200,000. Recently the spanning of the passages between the various docks has been modernised by the substitution of electrically-controlled bridges of the rolling bascule type for the hydraulic horizontal swing roadways.

In proposing the toast of the Mersey Docks and Harbour Board, the Mayor of Birkenhead, at the luncheon, said the history of Liverpool and Birkenhead was largely written in the 19th century. In 1855 Liverpool bought up the bond of the Birkenhead Dock Trust, and, under Act of Parliament, constituted the Dock Board. From January 1st, 1858, the dock dues of all Merseyside had been collected by the Mersey Docks and Harbour Board. The Dock Board occupied a place in the North of England without equal, and its activities had always been for the benefit of Merseyside.

Mr. R. D. Holt, chairman of the Mersey Docks and Harbour Board, declared that Bidston Dock had very great potentialities. It could be used by ships drawing 28-ft. at all tides. He noticed that his good friends at Bromborough had made a very large profit last year, and he did not see why the Bidston Dock should not do the same. The Dock Board did their best to develop the traffic on that side of the water and, as a matter of fact, they had a very important traffic, because the export trade to the Far East, India and South Africa was conducted from Birkenhead. What they wanted was an increase in the export trade, and if they could get that, Birkenhead would be a much more flourishing place than it was to-day. It was essential for the prosperity of the Dock Board as a whole that the whole of the component parts should be successful. They had no interest in seeing one part of the dock estate derelict and the other flourishing. The more any part of the dock estate was flourishing, the more it helped every other part to develop.

Mr. Edmund Gardner, another member of the Dock Board, said in the boroughs of Birkenhead and Wallasey the Board had spent very large sums of money during the last few years in providing a new river entrance lock to the Alfred Dock with a depth to keep in step with the Suez Canal, five new bridges capable of dealing with modern road and rail traffic, a new electrically-driven coal conveyor which could handle 20-ton wagons and deliver at the rate of 500 tons per hour, new sheds for shipping, and, finally, the new dock at Bidston, which was connected with the Float by means of a passage 100-ft. wide, the completion of which they were celebrating that day. A port authority, however, must build ahead in reasonable anticipation of requirements, and they believed that when the tide turned and trade increased that new dock would be of great value and further the prosperity of both Birkenhead and Wallasey.

Wallasey Foreshore.

Wallasey Corporation has constructed a 10-acre marine lake at New Brighton at a cost of £80,000 as part of the promenade development scheme, and it was officially opened on May 31st. Recently, as an experiment, it was filled and emptied again. This process can, by the system of sluices which have been introduced, be completed in a few hours at low tide. When the tides are normal the filling will be a slow process, but high tides will fill the lake quickly with fresh, clean water.

Visit of Prince George.

When H.R.H. Prince George visited Lancashire on May 16th he inspected the canal wharf, which has been in course of construction for about two years, for the Lancashire Steel Corporation. The wharf, on the Manchester Ship Canal, accommodates the largest steamers using the waterway. The ore unloading and raw materials handling plant, which has no counterpart in Great Britain, deals both with land and sea-borne supplies, eliminating hand labour beyond that required to control the transporters which deliver the material to the requisite points of consumption. Finished products can also be dealt with by this plant and shipped to all parts of the world.

Notes from the North—continued

Liverpool Dock Works Completed.

Now that the central docks improvement scheme at Liverpool has been completed, it is opportune to briefly recapitulate the extensiveness of the works that have been undertaken at a cost of £750,000. The principle feature is a wet dock capable of accommodating a fleet of the largest and most modern coasting vessels, with graving docks attached, to which such vessels may conveniently and without loss of time retire for repairs or maintenance. This wet dock, to be known as Trafalgar Dock, is over 2,000-ft. long by 200-ft. wide, with a water area of 10¼ acres, and a lineal quayage measuring 4,353-ft. To render this possible the site of certain docks which had been in commission for over 100 years had to be utilised, e.g., the western portions of the Victoria and Trafalgar Docks, a small unnamed dock which served also as a lock between the Trafalgar and Clarence Half-tide Dock and river entrance, and the Clarence Dock Basin. Linking-up with the general dock system has been effected by the construction of a new passage, 60-ft. wide, with 26½-ft. of water over its sill on spring tides, leading northwards to Salisbury Dock, thereby affording means for vessels entering or leaving *via* the Sandon river entrances, Canada Lock, or at any state of the tide by the Gladstone river entrance lock. The old passage between the Victoria and West Waterloo Docks has been widened and deepened to the same dimensions, and the passage leading from West Waterloo Dock to Prince's Half-tide Dock has had the curvature of its sill removed and squared, so that vessels may be entered or cleared *via* the river entrances to Prince's Half-tide Dock. The western quay of the new Trafalgar Dock offers straight line berthage for a length of 2,105-ft., and the eastern quay 899-ft. Both quays are equipped with wide single-storey transit sheds throughout their lengths, the aggregate covered space provided being 17,857 sq. yds. The shed roofs have been designed to take movable cargo-handling cranes or transporters. All the quays and sheds are served by railway sidings.

Rolling lift bridges electrically operated capable of taking the heaviest road or rail traffic have been provided across two of the above-mentioned passages.

One of the old Clarence Graving Docks of the two-compartment type, an integral part of the scheme, has been shortened to a gross length of 569-ft. and given a new entrance 45-ft. wide with 21-ft. of water on spring tides. The other old graving dock has been modernised in cross sections by the removal of the altarcourses and squaring of its sides, being at the same time given a new entrance 52-ft. wide with 22½-ft. depth of water on spring tides. This unit will now accommodate the very largest type of coastwise steamers, e.g., the Ulster Monarch class. Both graving docks, which formerly ran dry by gravity on the ebb tide, a slow and antiquated method, are now emptied by a modern electrically-driven pumping installation, entirely independent of the state of the tide.

Turned Down.

Recently Mr. C. J. Cutcliffe Hyne submitted to the Prime Minister a scheme advocating the reclamation of 150 sq. miles of Morecambe Bay by the building of a 10-mile dam across the mouth of the bay from Heysham to Foulney Island, near Barrow. In his reply to Mr. Cutcliffe Hyne the Prime Minister stated that the scheme had been examined, but he could not see his way to give effect to the proposals at present.

The Mayor of Morecambe and Heysham, referring to the scheme, added: " From the building point of view it would cost millions of pounds, and after all that expense it would not be worth while. If the scheme had been to reclaim a piece of land that was only covered by water at very high tides I could have understood it, but a scheme on the lines suggested by Mr. Cutcliffe Hyne is out of all reason and rather reminds me of the story that Jules Verne wrote." The Town Clerk of Morecambe and Heysham (Mr. J. Entwistle) expressed the opinion that the scheme would cost £100,000,000, unless perhaps it was suggested that they should remove the lake mountains to fill up the sea in Morecambe Bay. Even if the land was reclaimed it would cost a fabulous sum of money for drainage before the land could ever be used for the purposes of cultivation. " We have an example at Silverdale," he said, " where they tried to reclaim certain land in Morecambe Bay, but it was found that it was more profitable to let it off for wild fowl shooting than to reclaim it for cultivation."

Preston Dock Charges.

Preston Corporation has decided upon the appointment of a new engineer for the Ribble Dock undertaking in succession to Mr. James Barron, who retires in May on superannuation. It had been recommended that the services of Mr. James Barron be retained in a consultative capacity for a period of 12 months from May 26th, 1933, and that he be paid a sum of £300; that Mr. Alfred Hartley Howarth, A.M.Inst.C.E., the chief assistant, be appointed engineer of the Ribble navigation undertaking from May 26th at a salary of £700 per annum, rising by two annual increments of £50; that Mr. J. C. Merriweather be appointed general superintendent as from the 26th May, 1933; that the salary of Mr. Harry Lea, chief mechanical engineer, be increased from £300 to £350 per annum, rising by annual increments of £25 to £400; that the salary of Mr. G. M. Vaughan, dredging superintendent, be increased from £375 to £400 per annum. The Finance Committee did not approve of the proposal to appoint Mr. Barron in a consultative capacity. The appointments of Mr. Howarth as engineer and Mr. Merriweather as general superintendent were approved. The other two recommendations were withdrawn.

Mr. Alfred Hartley Howarth, A.M.Inst.C.E., the new engineer of the Ribble navigation undertaking, is the son of the Town Clerk, Sir Alfred Howarth, and he succeeded Mr. James Barron, the retiring engineer, on May 26th. He has been in the service of the Corporation since 1910, when he started as an apprentice civil engineer under Mr. Barron. For a year he was in the engineering workshops at the dock, and then he went in the office till 1914. In 1921, he qualified as a chartered civil engineer, and about a year later was appointed Mr. Barron's chief assistant.

Master Porterage at Liverpool.

Mersey Docks and Harbour Board has amended its master porterage rates in connection with entire cargoes of sugar. It is provided that when the quantity of sugar discharged in the docks of the Board amounts to 1,500 tons or over in any one cargo, the rates to be subject to a deduction of 10 per cent. This also applies to sugar dealt with under the classification tables.

Mersey Tunnel.

Nearly four and a-half million pounds has been spent to date on the new Mersey Tunnel, according to a report made to the Tunnel Joint Committee. The engineer's report stated that 220 men are employed on the construction of the full-size tunnel on the Birkenhead side, where about 81 per cent. of the dado had been fixed. The interior finish has been started, and 1,369-ft., or 33 per cent. of the total, has been done. A total of £238,000 has been expended in constructing the ventilation works. Ninety-eight per cent. of the concrete roadway has been done, and progress is also reported in the fixing of telephones and fire alarms. The total value of the engineering works to date is £4,446,050, and 460 men are now employed.

Creating Port Unity.

" Of the greatest possible importance to Birkenhead is the opening of the new Bidston Moss Dock," said Mr. W. T. McIvor at the last meeting of the Birkenhead Chamber of Commerce. This, he went on to say, was evidence that those who were responsible for the administration of the Port of Liverpool recognised the increasing value and importance of the dock estate situated on the Birkenhead side. There were grounds for hoping that this growing confidence would result in a still further development of Birkenhead's resources. The Port of Liverpool comprised both sides of the river, and it was only by utilising the resources of both sides that the future extension of the port as a whole could be advantageously and satisfactorily accomplished. Anything which made for the greater success of the port as a whole must benefit both sides of the river and must have its reflex in the increased prosperity of the community on both sides, whose business interests were so intimately and vitally bound up with the prosperity of the docks. He regarded the extension at Birkenhead as one of the first effects of the new tunnel scheme, for he had grave doubts whether the Dock Board would have seriously considered such a large extension on the Birkenhead side unless this easier access to Liverpool was likely to be realised at a comparatively early date. The division of the dock system of the port into two portions had had its disadvantages, more particularly in relation to the docks on the Birkenhead side, and it was easy to realise how great would be the change when the two sides of the river were linked up, and what had hitherto been two separate entities would be merged into one united whole.

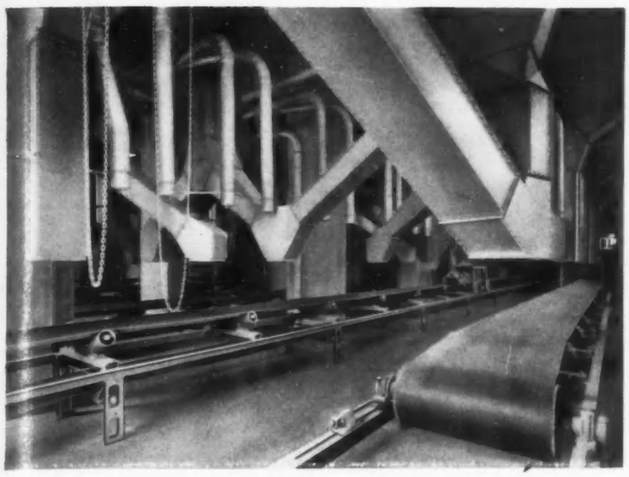
Egremont Ferry.

Wallasey Corporation hopes to be able to open the Egremont Ferry for service in July.

Demonstration of Paint Sprayer.

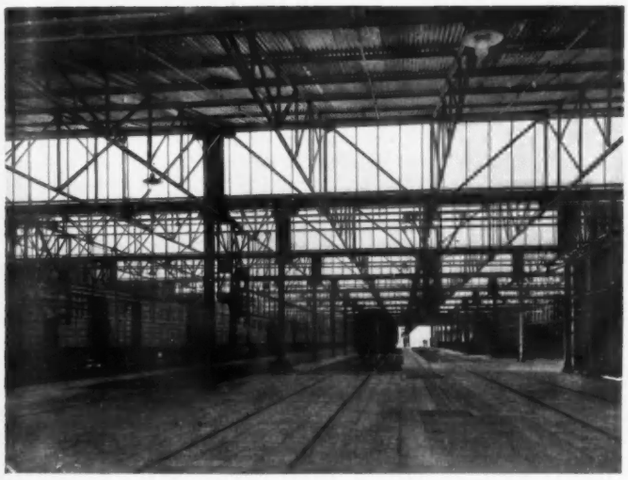
A demonstration of the " Volspray " paint spraying machine was given on the Mersey Docks and Harbour Board Estate, Liverpool, recently, by the Electric Scaling Hammers, Ltd., of London, when a door measuring 44 sq. yds. was painted with about 6 lbs. of material, the time taken being 40 minutes. The machine is claimed to be five to ten times quicker than brush application.

Completion of the New 80,000 Tons Granary at Bahia Blanca, Argentine



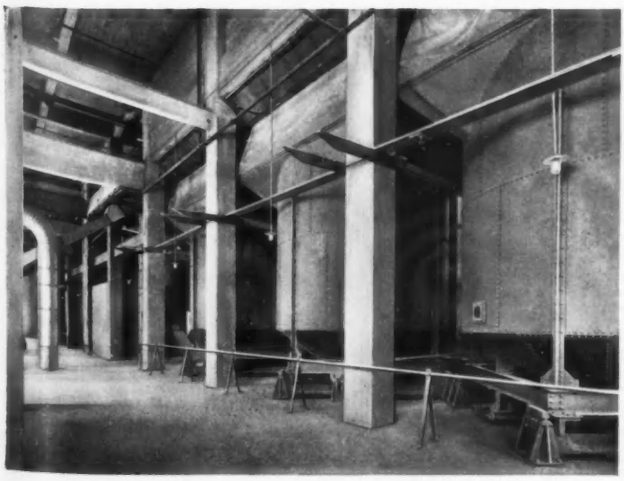
Conveyors under the bins in the Working House.

Spouts feeding bins in Main Storage Building.

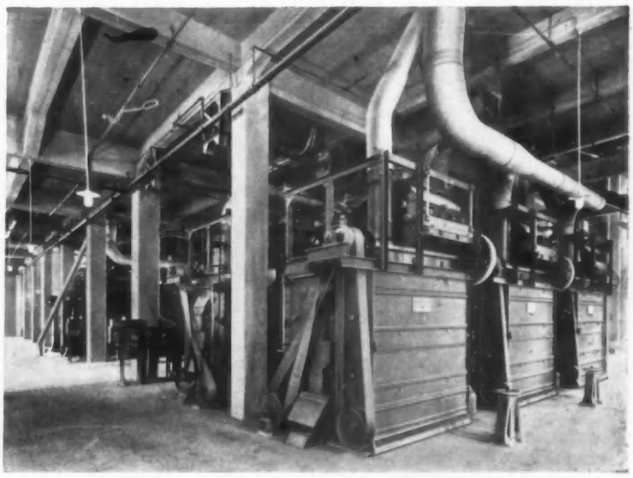


Wagon Unloading Shed.

Line of Conveyors under the bins in the Main Storage Building.



Dormant Hopper Scales in the Working House.



A battery of "Big 6" Carter Disc Separators.

Completion of the New 80,000 Tonn

Plant taken over by the Buenos Great

General view of the New Granary shewing the Wagon Unloading Shed on the left and Whole Co

THE magnificent granary which Messrs. Henry Simon, Ltd., Cheadle Heath, Stockport, have built and equipped at Ingeniero White, Bahia Blanca, in the Argentine, for the Buenos Aires Great Southern Railway Company has now been completed, and successfully started up, and the installation has been formally taken over by the Railway Company.

The granary, which has a storage capacity of 80,000 tons of grain (approximately 3 million bushels), is the largest in South America, and its equipment is unquestionably the most complete in the world. The granary can receive 1,000 tons of grain per hour, and simultaneously load six ocean-going ships at the rate of 1,000 tons per hour to each vessel. These loading-out facilities are unequalled at any other granary.

The erection and equipment of the granary has been carried out under the supervision of Messrs. Henry Simon's own staff of engineers, with local labour, and the whole of the machinery has been manufactured in their works at Cheadle Heath, thereby providing a considerable amount of work for British labour for upwards of two years.

The order for the new granary and grain handling equipment was the direct outcome of a report which was prepared for the Buenos Aires Great Southern Railway Company by one of Messrs. Henry Simon's engineers, Mr. C. P. Kininmonth, on the grain handling facilities at Bahia Blanca, and the methods required to expedite the handling of grain at that port. This report was accepted by the Railway Company, who decided to proceed with the new works proposed, and

The New Granary.

ranary at Bahia Blanca, Argentine

reat Southern Railway Company

ole Gantry on the right. The two existing Granaries can be seen in the background.

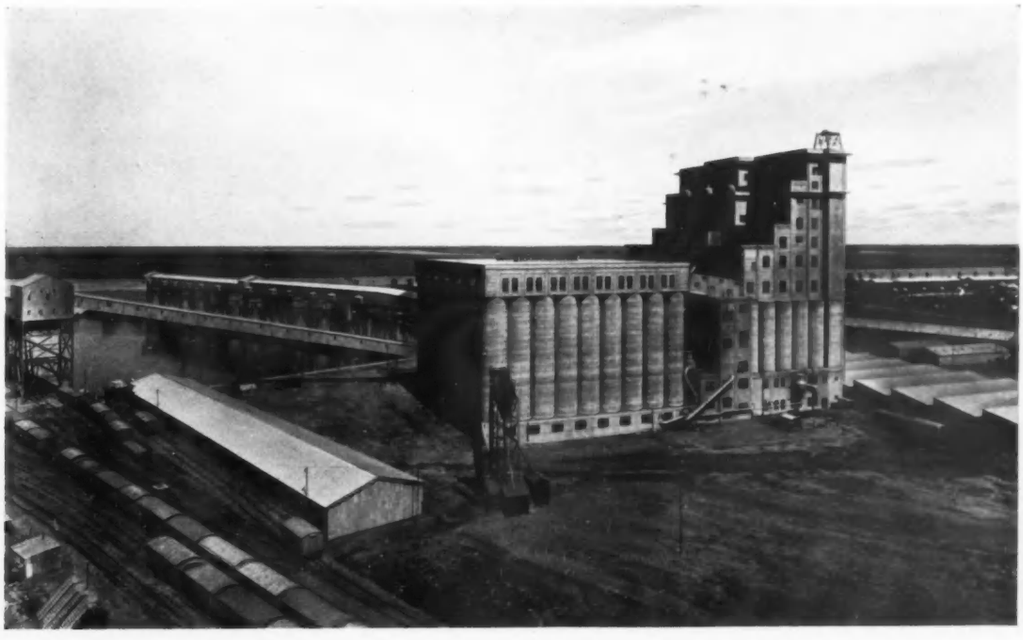
gave Messrs. Henry Simon, Ltd., the order for the new granary and the whole of the grain handling equipment required.

The new installation embodies an 80,000 tons reinforced concrete granary with exceptional railway wagon unloading facilities, extensive shipping galleries, and a new loading jetty to accommodate four big ships. The scheme has cost over £1,000,000 to complete, the portion of the work given to Messrs. Henry Simon, Ltd., amounting to well over £800,000.

The improved storage accommodation and loading-out plant will speed up the work of transferring grain to ships, and will expedite the handling of the harvest throughout. The new granary system provides the most complete grain exporting facilities, and definitely places Bahia Blanca in the forefront as a grain loading port.

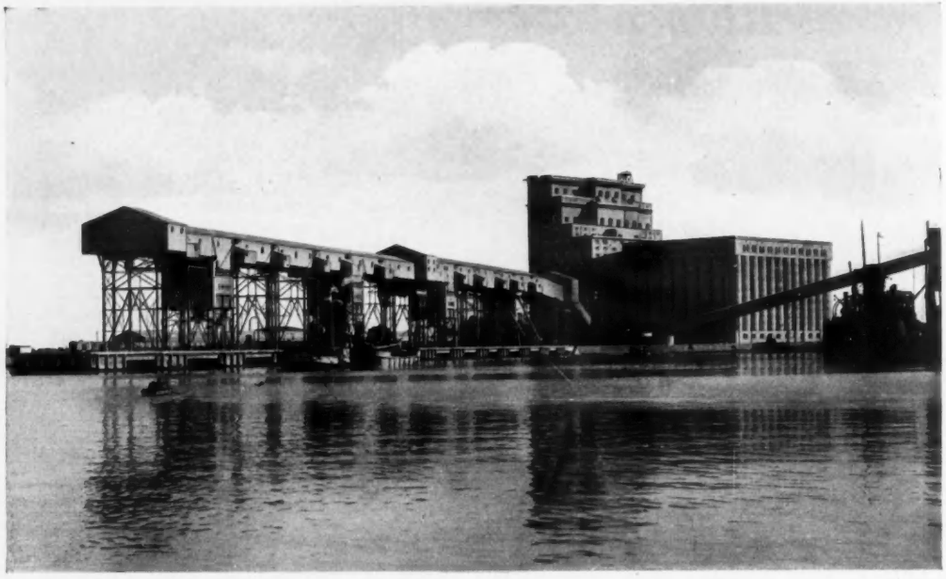
The new granary has been built at Ingeniero White at a point convenient for linking up with the two existing granaries. The building itself is divided into three main sections—working house, main storage building and shipping house. There is accommodation for approximately 60,000 tons of grain in the main storage building, and for 20,000 tons in the working house.

The working house is approximately 210-ft. long by 100-ft. wide, and 220-ft. high at the highest point. 126 concrete bins are located below the second floor for the storage of grain, and the equipment includes receiving elevators, six 50-ton scales, and an extensive range of conveyors and elevators for



Another view of the Granary. The Refuse Incinerator can be seen in the foreground.

Completion of New Granary at Bahia Blanca, Argentine—continued



General view of Granary shewing the new mole and gantry, and on the right the gantry connecting with the existing granaries.

transporting and turning over the grain, and for transferring it to the main storage building and to the loading-out conveyors. Comprehensive cleaning plants and a dust collecting system are also accommodated in this section.

The main storage building, which is 220-ft. long and 167-ft. wide, comprises a block of 196 bins. Six covered galleries connect the top of the main storage bins with the second or bin-top floor of the working house. The necessary grain handling machinery is provided both above and below the bins.

In the shipping house, which is approximately 220-ft. long by 50-ft. wide, is arranged the shipping elevators and weighers, and the banks of shipping conveyors which connect with those arranged in the overhead steel galleries. The conveyors in the galleries link up the new granary with the existing granaries, and with the new jetty.

All grain dealt with at Bahia Blanca is brought to the port by rail. The new granary has been designed to combine two principal objects:—

(1) To concentrate the bulk of the unloading of railway wagons bringing grain to the port, as far as possible, at one point, in order to avoid the complicated shunting and classifying operations which had previously been necessary.

Subway below the hoppers in the Wagon Unloading Shed. The conveyors for transferring the grain to the working house can be seen on the left and right of the picture.

(2) To provide independent accommodation in regard to storage and shipping for separate shipping firms if required.

To deal with the former of these requirements, an extensive unloading shed is provided with six railway tracks running through it, and eight large concrete hoppers below each track—forty-eight in all. Each hopper is 39-ft. long by 20-ft. wide, and holds 50-tons of wheat. Six belt conveyors in the basement below these hoppers, and six transverse conveyors transfer the grain from the hoppers to the six main intake elevators of the granary. The opening and closing of the hopper gates is controlled from two cabins at the south end of the basement, and interlocking gear prevents more than one gate in each line being opened at the same time. The closing of each gate automatically signals the despatch of a load to the reception scales in the granary.

There are three powerful haulage gears of special design, capable of hauling into the unloading shed eight loaded 45-ton wagons, and at the same time pushing out eight empty wagons. These operations are controllable from any position in the shed. Ten electric capstans are employed to marshal the empty wagons for return up-country.

Each of the six 500-ton receiving elevators in the working house delivers to a 50-ton scale garner, of which there are six, and alternatively (via one of three reversible transfer conveyors) to one of the scales on the other side of the building. The two scales between them can deliver to any bin in the granary. The scales are of the dormant hopper type, totally enclosed to avoid dust, and the garner and scale gates are operated by compressed air.

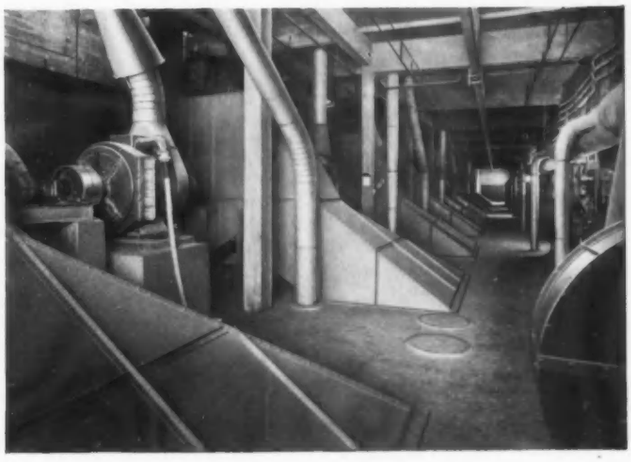
Distribution to the bins is effected by six 42-in. belt conveyors with electrically driven throw-off carriages. Each distribution belt feeds one of the six sections of these bins, and each section is practically independent of the others for shipping, turning-over, and secondary cleaning operations.

For primary cleaning, which consists of the removal of oats and wild oats from some consignments of wheat, two installations of "Big 6" "Carter" Disc Separators are provided on the fourth floor of the granary. Each installation comprises six machines, and an aggregate of 1,224 "Carter" discs, with a capacity of 500 tons per hour. This is by far the largest "Carter" installation in the world. Such wagon loads of grain as require this treatment are passed over one of these plants before being sent to the bins. Each plant comprises a feeding elevator, and conveyors and elevators for the handling of the cleaned grain and screenings. The row of bins along the western front of the building is reserved for screenings from these plants.

In the shipping house, which is arranged between the working house and main storage building, are twelve elevators of 500 tons per hour capacity each, and twelve 30-ton dormant hopper scales with compressed air operated gates. Eighteen 36-in. belt conveyors below the main storage bins—three to each section—feed these elevators and scales, and a corresponding number are provided below the working house. These belts can also deliver to the six separate installations of double scourers and oat-clippers on the ground floor of the working house. The clean grain from these machines is re-transferred

Completion of the New 80,000 Tons Granary at Bahia Blanca, Argentine

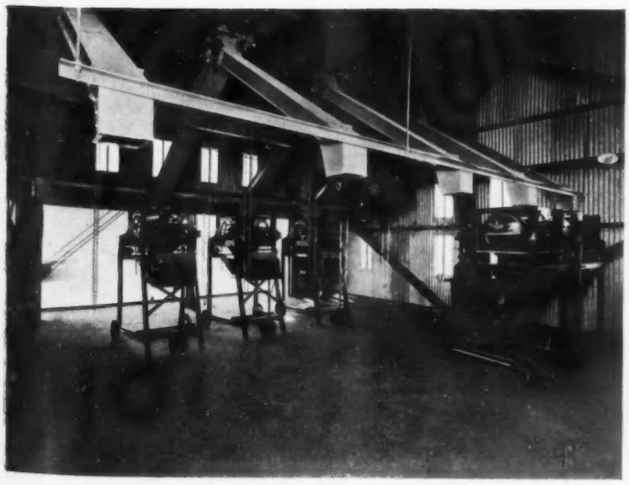
Signal Cabin in Working House for control of grain reception.



Line of Shipping Elevator Heads.

Looking along the Gantry on the New Mole.

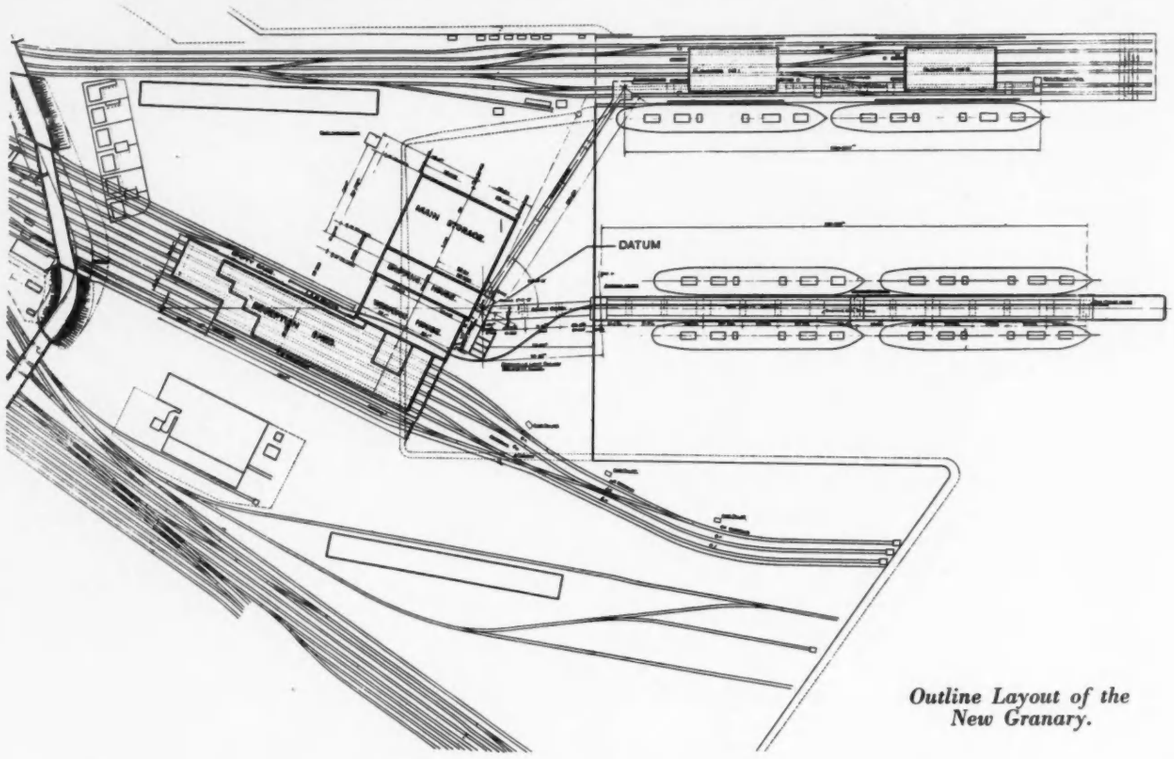
Sub-station Switch Room.



"Reform" Sacking-off Weighers in one of the Sacking Stations on the New Mole.

Loading-out Gantry on the New Mole showing loading Spouts. The sacking stations can be seen below the Gantry.

Completion of New Granary at Bahia Blanca, Argentine—continued



Outline Layout of the New Granary.

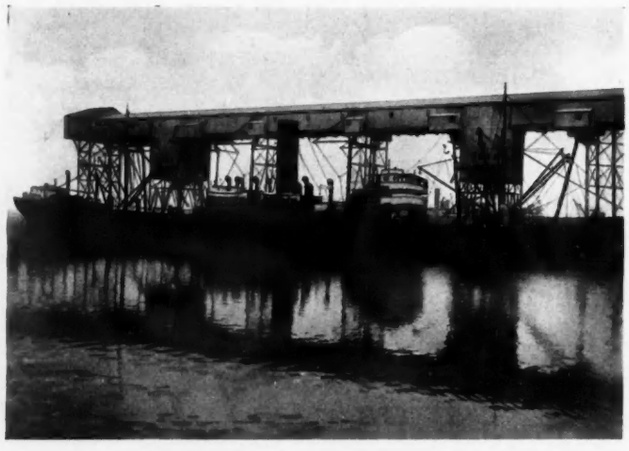
to storage by six 160-ton per nour twin elevators and six conveyors over the main storage. Delivery to some of the working house bins can also be effected by telescopic " walking spouts." The same equipment serves for turning over.

Below the shipping scales are two banks of 36-in. belt conveyors, comprising fourteen in all, having a capacity of 500 tons per hour each. Six conveyors connect with the belts in the gantry, running up to and along the old mole. One of these is used for transferring grain to the existing granary No. 1, another to existing granary No. 2, and the remaining four serve the two loading berths on the west side of the old mole.

The other eight conveyors connect with those in the new mole gantry, and serve the four loading berths alongside that mole—two conveyors to each berth.

Grain is delivered to the ships by means of swivelling telescopic spouts, which are controlled by electric winches. At each pair of berths on the new mole there is a sacking-off station, containing a large hopper, fed by any of the conveyors passing overhead, and five 70 kilo "Reform" automatic nett sacking-off scales, with the necessary shoots for completing a cargo with a layer of bagged grain in accordance with the regulations of the Board of Trade and the underwriters.

As already mentioned, grain arrives at the port in sacks, and seven special carrier conveyors are installed in the unloading shed for collecting the empty sacks. From these the bales of sacks are automatically shot to a conveyor in the basement, and by it transferred to the ground floor of the working house for storage.



Loading the First Ship at the New Mole.

The signalling and intercommunication arrangements in the granary are very complete. They comprise a system by which the bin destination of each wagon load of grain is indicated to the men in charge of the distributing throw-off carriages by a red light appearing at the bin in question. There are also light signals, automatic as far as possible, between the intake scale-men, hopper gate controllers and " Carter " plant operators. Shipping is fully controlled also by coloured light signals throughout. There are also thirty telephones and three pneumatic despatch tube systems.

For dealing with elevator repairs, etc., the roof over the main elevator bay is removable in sections, leaving the receiving elevator heads exposed. An electric crane on the roof travels on rails along this bay.

Very complete dust collecting plant is installed, and the dust from all the cyclones, as well as refuse from the "Carter" machines and scourers, is collected together by one plant and blown across to a large incinerator outside the granary, having a capacity of 10 tons per day.

The new equipment includes one hunderd and twenty conveyors, the aggregate length of which is approximately five miles, and there are over twelve miles of conveyor and elevator belting.

The plant is electrically driven throughout; Messrs. Henry Simon, Ltd., being responsible for the whole of the electrical equipment, including a complete sub-station for transforming the supply from 6,600 volts to 440 volts. Over two hundred electric motors have been installed, for the most part of the pipe-ventilated type, totalling over 9,000 horse power.

This contract, which is the largest that has ever been placed with an English firm of granary engineers, has been carried through successfully. The foundations were completed in December, 1930, and the first ship was loaded from the granary in March, 1932. The completed plant was taken over by the Buenos Aires Great Southern Railway Co. on June 15th last.

Rapid Despatch at Newport Docks.

Yet another instance of quick despatch has been given in the case of the steamer " Harlingen," which completed loading coal at the Great Western Railway Company's Alexandra Dock, Newport, on May 6th. The loading was commenced at 7.25 a.m. on Wednesday, May 3rd, and the ship finished at 12.20 p.m. on Saturday, May 6th, having taken on board 7,689 tons of cargo and 1,290 tons of bunkers, total 8,979 tons, under a single tip.

After allowing for meal hours, etc., this works out at an average of 209 tons per working hour for cargo and bunkers, and this must be considered an excellent performance, having due regard to the construction of the ship, work involved, etc.

The shippers were Powell, Duffryn and Co., Ltd., and the brokers, William Cory and Sons, Ltd.

Hull and the Humber

Annual Meeting of the Humber Conservancy Commissioners.

AT the annual meeting of the Humber Conservancy Commissioners satisfaction was expressed that the Hull Corporation's Bill for the erection of a road bridge over the Humber between Hull and North Lincolnshire had been withdrawn. The chairman (Mr. J. H. Fisher, J.P.), however, commented that it now remained for the Commissioners to foot the bills for the expenses which they had been compelled to incur in opposing the measure in the interests of the safe navigation of the river. In moving the adoption of the report the chairman said that the income of the Board for the year was again disappointing. The receipts were £35,275, which was £2,130 less than in the previous period. The expenditure (after deleting capital and extraordinary payments) was £30,031 —a decrease of £1,620. The yield from shipping dues and the net registered tonnage of vessels on which shipping dues were paid both fell by 6 per cent. It was of interest to note the large increase (more than 100 per cent.) in the tonnage of ships which called for bunkers only, and which were exempt from shipping dues.

Referring to other matters, Mr. Fisher said that efforts made by the Board to bring about a reduction of the Humber pilotage rates had met with some success, and the Pilotage Committee had devoted and were still devoting a great amount of time and thought to the question of administration. The vexed proposal of the War Department to carry out artillery practice over an area embracing the entrance to the River Humber was being strenuously opposed by the Board and other bodies who are interested in the welfare of the navigation. He also made mention of the proceedings with regard to the wreck of the steam trawler " Lucerne " in the open sea in a position some 6½ miles eastward of Spurn Point. The Board of Trade decided against the representations made by the Conservancy Commissioners that the wreck was lying " in or near an approach to the Humber," and so saddled the Conservancy Board with the responsibility for dealing with it. In consequence, the Conservancy did deal with the wreck, but only in pursuance of the decision of the Board of Trade, and at the same time stipulated that their action was not to be regarded as a precedent or quoted against the Conservancy in any future case.

On the subject of the projection of advertisements or announcements upon the clouds, the Marine Committee recommended that the Rules and Delimiting Lines (drawn approximately 35 miles from the coast) be approved, and that in the event of their receiving applications for consent to sky-writing projects, the chairman of the committee be authorised to deal with them. The Board adopted the recommendation.

Trent Falls Improvement Works.

The Aire and Calder Navigation have informed the Humber Conservancy Commissioners that they are advised by their engineer that it is not possible to complete the training walls at Trent Falls within the period prescribed by the Act of Parliament under which they were authorised, viz., July 15th, 1934. The Navigation explained that the physical difficulties which had been encountered in carrying out the work would be fully appreciated by the Board, and they inquired whether the Conservancy would be willing to meet representatives of the Navigation to discuss the present position of the works and future action. The suggestion has been assented to by the Conservancy. It was stated at the meeting at which the letter was received that the whole of the Board's statutory contribution of £76,000 to the Trent Falls Improvement Works had now been paid and that it rested with the Aire and Calder Navigation to arrange for the completion of the work. These training walls are being constructed for several miles at the confluence of the Trent and the Ouse with a view to improving the scour of the river and the navigable channel up to Goole.

Personal.

Mr. J. H. Fisher, J.P., has been re-elected chairman of the Humber Conservancy Commissioners, and Mr. Bentley Bennett, deputy chairman.

Better Accommodation for the Timber Trade at Hull.

Extensive alterations have been made at the Hull Docks for the better accommodation of the timber import trade, the " season " for which as a rule begins in earnest during May. Vessels laden with wood from Scandinavian ports are coming to hand freely, as well as from the independent Baltic States, but there is great anxiety as to the importation of Russian sawn wood, which has been included in the embargo placed upon Russian products. Humber importers have bought very substantial quantities from the Soviet Government, and a company in which Hull firms are strongly represented has again undertaken the task of underwriting the whole of the season's Russian supplies of over 400,000 standards, valued at approximately £4,000,000 sterling. The practice of inland merchants sending their own motor lorries to the docks to accept delivery of timber and other articles has increased enormously of late, and where the wood has been bought on " to arrive " terms or ex ship, inconvenience and delay to shipping have been caused. In consequence of this, importers are urging their inland customers to accept delivery by rail, as was formerly the case.

Plant Dispersed at Earle's Shipbuilding Works, Hull.

The machinery and plant at Earle's Shipbuilding and Engineering Works at Hull have been dispersed at public auction, and the site, which covers 27 acres and has a valuable frontage to the River Humber, is now for sale, a stipulation of the vendors (National Shipbuilders' Security, Ltd.) being that it shall not again be used as a shipyard, though ship repairing would not be objected to. A proposal is before the Hull Corporation to purchase the land and construct a large dry-dock on part of it, to be let to ship repairers.

Coal Shipments from Humber Ports still Declining.

The shipments of coal at Hull and the sister ports of the Humber continue to fall below those of a year ago. The exports (foreign) for the four months January—April total 1,050,163 tons, as compared with 1,203,068 tons in the corresponding period of 1932; and from Boston and Lynn, 106,614 tons, against 114,314 tons. The shipment of coal bunkers, however, is more than maintained, thanks largely to the relaxation of the regulations and the exemption of vessels which come into the river for bunkers and stores only. Business for prompt shipment has been only moderate for some time past, but confidence is expressed that under the new trade agreements with Denmark, Germany and other countries there will be a considerable expansion of demand in the near future, and that there will follow increased activity at the docks.

Meeting of the Bridlington Harbour Commissioners.

The opposition to the proposal of the Air Ministry to erect a shed for repairing purposes and in effect to make Bridlington Harbour a seaplane base has been successful. At the last meeting of the Bridlington Harbour Commissioners (Dr. T. C. Jackson presiding) a letter was read from the Air Ministry announcing the abandonment of the scheme and expressing regret that the difficulties have been insurmountable, and that it was impossible to utilise the site previously occupied by Messrs. Morland. Instead the Ministry propose to erect a small slipway opposite their present yard and asked the Commissioners to agree to its erection and at the same time let them have a small piece of land in order to square off an existing shed at the west end of the harbour. It was decided, upon the motion of Alderman C. H. Wray and Councillor Newby, both of whom strongly opposed the original scheme, that the suggestion now made by the Ministry should be approved in principle and the matter referred to the Works Committee with full power to arrange all necessary details and to carry the suggestion into effect. The first proposal of the Ministry aroused protests from the Bridlington Corporation and various organisations, their fear being that the scheme would injure Bridlington as a pleasure resort and interfere with the fishing industry. Although the objections of the fishermen have been met, it is questioned whether the result will be to the ultimate advantage of Bridlington, since it is reported the Ministry are intending to take most of their aircraft away.

Maintenance Work at Flamborough.

For maintenance work at Flamborough (East Yorkshire) north landing the North-Eastern Sea Fisheries Committee have made a grant of £100 to the Flamborough Harbour Commissioners and to supplement the grant with a loan of £100. It was also agreed that application be made to the Ministry of Agriculture and Fisheries for a grant of £50 and a loan of £50 towards the cost of the work, the money to be administered through the committee.

Immingham Dock Statistics.

During the month of April a total of 76 vessels, representing a net registered tonnage of 97,920, used Immingham Dock, including 9 vessels totalling 11,538 net registered tons using the Western Jetty coaling berth, as compared with April, 1932, when 110 vessels totalling 152,218 net registered tons used the port, including 13 vessels totalling 24,747 net registered tons using the Western Jetty.

North-East Coast Notes.

Trade Outlook Brighter on the North-East Coast.

ALTHOUGH the trade on the North-East Coast still drags along somewhat, a cheerier tone has come into the area recently as the sequel to the signing of the trade pacts with the Scandinavian Governments, as well as Germany. Having regard to the intense world-wide depression, this area has really less to complain of in some respects than have some other districts. True foreign quotas have seriously handicapped the coal trade of the North, but all along the industry in these counties has received a wonderful measure of support from abroad, and if proof were needed of this statement it could be found in the fact that foreign countries have been complaining of the dumping of British coal, and have endeavoured by all sorts of means to encourage the consumption of home-produced fuel. It is uncertain to what extent local trade will benefit from the trade pacts, but if this district gains some 700,000 tons added to its coal exports—as has been suggested—it will be very welcome to all concerned and prove a great benefit to local industries.

Import of Canadian Cattle.

Some time and thought have been devoted to considering the feasibility of developing Canadian cattle import trade at Newcastle, and the local Chamber of Commerce has debated the matter at length, but at their meeting in May they decided to proceed no further with the matter. This decision was arrived at following the consideration of a letter from the Town Clerk of Newcastle. The Town Clerk wrote that the Trade and Commerce Committee of the Corporation had considered the question of providing a landing place for imported cattle at Newcastle Quay. The cost of the works was estimated at £4,000. The Ministry of Agriculture and Fisheries had informed the Corporation, however, that in their opinion the scheme would be highly speculative. They pointed out that the United States provided a potential outlet for Canadian cattle, and, although the raising of the U.S. tariff had caused a revival of the importation of Canadian cattle into this country, it was probable that the needs of American consumers would eventually lead to a modification of the tariff, in which event consignments from Canada to this country would diminish, and perhaps cease. The Ministry added that they understood that it was difficult to make the existing landing places pay their way, and they suggested that a considerable loss would probably result from such an undertaking as the Corporation proposed. In view of those facts, the Town Clerk wrote, the Corporation Trade and Commerce Committee had decided not to proceed further at present with the matter.

Records of Smart Work.

The capabilities of the North-East Coast ports for speedy coal shipments have been recently illustrated at two different shipping places. For instance, there was a very smart loading performance at Tyne Dock at the beginning of May. The steamer "Mile End" entered the dock at 6 p.m. and immediately went under the spouts. The vessel finished loading at 9 p.m., having in three hours taken on board 1,100 tons of cargo and bunkers. Another piece of good work was in respect to the motor vessel "Sheaf Holme," which loaded a cargo of 8,000 tons of coal at Tyne Dock in 22 hours. The third case was reported by the London and North-Eastern Railway Co. to the effect that the "Tunisia," while at Hartlepool, took aboard 6,785 tons of cargo and 545 tons of bunkers. The total time in port was 36 hours and 45 minutes, and the coal was shipped in 34 hours and 35 minutes.

Some Trade Figures.

The Docks and Trade Committee of the Tyne Improvement Commission reported at the end of April that the figures of coal and coke shipments for the first quarter of the year showed a total of 3,221,166 tons, as against 3,375,297 tons for the corresponding period of last year. Shipments of bunker coal had declined by 131,149 tons, and oil fuel bunkers by 1,089 tons during the quarter, as compared with the corresponding three months of 1932.

The Board resolved that the river dues on petroleum spirit imported into or exported from the Tyne should be reduced from 1s. to 9d. per ton.

The trade figures for Sunderland indicate that the coal and coke shipments were rather lower for the first three months of this year. The total was 1,093,153 tons, compared with 1,309,170 tons in the comparative period of 1932. Other exports were: Pitch and tar, 2,476 tons; petroleum, 3,345 tons; iron and steel, 258 tons; and sundries, 2,420 tons. An interesting feature in regard to the imports is that the petroleum entries for March at 14,073 tons constituted a record in which all the six importing companies participated. The total for the three months was 23,753 tons. Other leading imports were: Timber, 5,139 loads; grain, 4,669 tons; esparto, 4,071 tons; cement, 3,877 tons; wood pulp, 1,521 tons; and sundries, 11,271 tons. The total imports for the three months of this year were 54,329 tons, an increase of 680 tons on 1932.

Affairs at Blyth.

Mr. Ridley Warham, Chairman of Blyth Harbour Commission, at the April meeting of that body referred to a circular dated March, issued by the Baltic and International Maritime Conference, alleging delay to Scandinavian vessels in the port, and said there were certain instances of detention to vessels. These were mainly caused by the influenza epidemic prior to the date of the complaint, but he was glad to say that conditions were again normal.

A statement of coal shipments for March with the corresponding shipments for 1932 and 1913 gave the following figures: 1933, 507,125 tons; 1932, 446,356 tons; 1913, 339,266 tons; comparative figures for the three months: 1933, 1,416,147 tons; 1932, 1,308,603 tons; 1913, 1,103,740 tons. The 1933 figures represented an increase of 8 per cent. on the corresponding period of 1932, and 28 per cent. as compared with 1913. The shipments for the three months ended March 31st this year were, in fact, a record for the port.

Tees-side Iron Trade Progress.

It is satisfactory to note that the iron and steel trade of the Tees shows signs of continued expansion, for the exports for April were the heaviest of any month this year. There has been some decline in the aggregate shipments of pig iron, Scotland having taken only 4,842 tons compared with 10,036 tons in March. On the other hand, 4,190 tons of pig iron have been shipped to South Wales, whereas none went in March, and the result is that the total pig iron shipments reached 12,614 tons, compared with 15,465 tons in March. As the result of an increase of 4,367 tons in the overseas trade, the aggregate of the month's clearances of manufactured iron and steel has advanced from 16,401 tons in March to 20,753 tons in April, and the total of all descriptions of pig iron and manufactured iron and steel for April is 33,367 tons, compared with 31,866 tons in March.

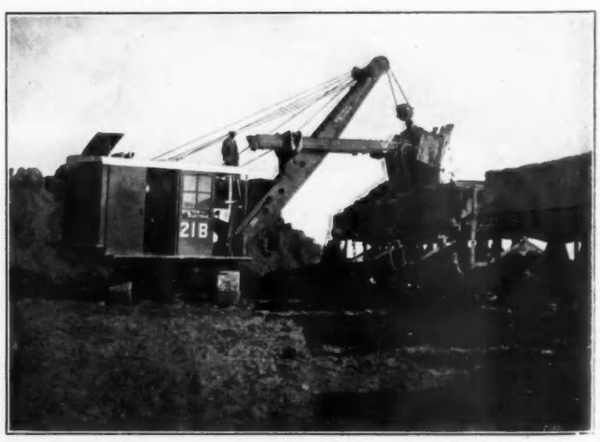
Southampton Graving Dock.

Messrs. Stothert and Pitt, Ltd., engineers, Bath, are building the electric hauling machinery for moving the caisson at the above dock to the order of the Furness Shipbuilding Co., and under the supervision of the Southern Railway Company's engineers.

The hauling machinery is of special design, embodying a combined system of main and auxiliary reversing type motors, with push-button control. The motors and control gear will be in duplicate, either set of which can be put into operation from the control centre situated at the front of the machinery building.

Ruston-Bucyrus, Ltd., Lincoln.

Ruston-Bucyrus, Ltd., Lincoln, have delivered four of their new type Diesel Excavators, recently ordered by Stewarts and Lloyds, Ltd., for use in the development of the new steel works which are being erected at Corby.



Quick delivery of these machines was essential, and actually two were sent complete by road. All the excavators are now hard at work on site, the latter two commencing approximately three working days after the receipt of the order at Lincoln.

Eight Ruston-Bucyrus excavators are employed on this large new enterprise.

The Port of Dunkirk (continued from page 232)

Cranes.

The number of cranes installed on the various quays and owned by the Chamber of Commerce is now 189, including transporters.

They travel on tracks behind the cope-line and are either electrically or hydraulically driven. Their lifting capacity varies from 1½ to 10 metric tons. Any of them can be fitted with automatic grabs, of which there are 92, specially adapted for various classes of work.

The cranes being compact and adaptable, several of them can be grouped and employed together for unloading the same ship. The operations in such case, bringing several tracks into use at once, are carried out with remarkable speed.

Transporters, Pilers.

The handling of heavy materials, such as coal and ore, requires specially powerful and durable plant. To meet this need the Chamber has acquired, in addition to numerous 10-ton grab cranes, transporter cranes whose simultaneous employment enables the discharge of coal to be effected at the rate of 400 tons an hour.

Each transporter comprises a steel portal frame of 16-metre opening, running on two rails and spanning over three running tracks. The portal girder is extended outwards to 21 metres from cope-line by a movable arm, and inwards the fixed length extends far enough for the grab to reach a shoot whose axis is 4 metres behind the rear rail. Each machine is fitted with a self-acting grab, of 2¼-cubic metre (3-yard) capacity, lifted by an electric crab running from end to end of the girder and movable arm. The whole transporter is mounted on 12 wheels, and the total weight of each is 103 tons. One man can operate the machine, which works at an average rate of 100 tons an hour.

The pilers, to the number of ten, enable sacks to be stacked in the sheds to a height of about 10 metres (33 feet), at the rate of about 30 tons an hour, and they can work in conjunction with band conveyors of a like capacity.

Electric Sub-stations.

Electrical energy is supplied to the sub-stations in the form of 3-phase current at 15,500 volts, by the Dunkirk District Electricity Company (S.E.R.D.), which itself receives it at 45 or 90,000 volts from the mining central stations.

The 3-phase, 15,500-volt current is carried by four cables connected by a ring-main surrounding the whole dock estate; two of the cables, on a common feeder, are reserved for the mechanical handling equipment of the Chamber of Commerce and can draw upon an emergency reserve supply from a central station at Coudekerque, in case of failure of supply from the mines.

The sub-station on Pier No. 4, having a total capacity of 1,500 k.w. in 3 groups of 500 k.w. (increased in 1932 to 2,000 k.w.), transforms the alternating current into direct current, at 525 volts, for supply to the electrical machinery.

Hydraulic Sub-stations.

For operation of the hydraulic machinery the pressure is distributed from two stations: (a) That known as the "Samaritan Station," which has three centrifugal pumps, each delivering 20 litres a second, driven by three 3-phase motors of 250 h.p., and one pump delivering 7 litres a second, driven by a 110-h.p. motor, with transformers and apparatus at high and low pressure; (b) that known as the "Graving Docks Station," which has, in addition to the dewatering pumps, compressing pumps for the supply of pressure water to the lock-gate machines.

The two stations, being linked together by an underground connection, can supplement each other in case of need.

Floating Cranes.

As soon as a vessel is berthed, the cargo must be transferred as rapidly as possible, at all available points, and machinery on the quayside only would be insufficient. In order to handle goods on the waterside also, floating plant mounted on pontoons is required.

There are numerous floating cranes at Dunkirk, the Chamber of Commerce owning four, whose respective lifting capacity is 10, 20, 50 and 120 tons.

The 10-ton and 50-ton cranes are steam-driven; the 20-ton and 120-ton cranes driven by electric motors, fed from a central generating plant, with Diesel engines, carried on each of them.

The 10-ton crane is self-propelling and can carry a load of 30 tons. This machine is in daily use and much appreciated. The hook is lifted to 17½ metres above water level, the outreach is from 8 to 15 metres, and the hoisting speed 7 metres per minute.

The 20-ton crane also is self-propelling, the jib luffing from 7 to 28-metre radius, with horizontal travel of the load, which can be lifted to a height of 30 metres. These features enable a load to be lifted from ship to quay, working right over the ship. This crane can carry 100 tons on board. The hoisting speed is 12 metres a minute up to 10 tons, and 6 metres a minute up to 20 tons.

The 50-ton crane is not self-propelling. Its radius varies from 15 to 19 metres. Its hoisting speeds are 50 cm., 90 cm. and 1m. 60 cm. per minute respectively, for loads of 50 tons at 17m., 20 tons at 19m. and 10 tons at 19m. radius. It can carry 100 tons.

The 120-ton crane is self-propelling. It comprises two mechanisms: (1) Auxiliary—lifting loads under 40 tons at a range of 21 to 38 metres, to a height of hook of 48 metres above water level. (2) Principal—for loads up to 120 tons at a range of 15 to 26 metres, to a hook height of 36 metres.

The hoisting speeds are: For loads under 40 tons, 6 metres a minute; 40 to 60 tons, 3 metres a minute; 60 to 120 tons, 1¼ metres a minute.

Photo] [Cayez, Dunkirk

Extension Works: Construction of the New Entrance Lock.

This 120-ton crane can carry 180 tons. The pontoon is maintained horizontal throughout by means of a travelling counterweight.

The 20 and 120-ton cranes are fitted with mechanism for weighing while lifting. These machines can be used for lifting and replacing ships' masts.

The 120-ton crane is of inestimable value to the port, being frequently employed for loading heavy machine parts, locomotives, etc., despatched from construction works in the North of France. It can in emergency play the rôle of a floating generating plant during any short interruption of electric current from normal sources.

Pneumatic Grain Conveyors.

Although Flanders is an agricultural country, its production of cereals is very inadequate to the needs of its population; so that the importation of grain has an important place in the trade of Dunkirk, and the Chamber of Commerce, alive to this fact, has done all in its power to encourage it.

The equipment for handling grain is of the highest order. It comprises especially six pneumatic conveyors of the most up-to-date type.

The suction conveyors draw the grain in bulk from ship's hold and deliver it, after ventilation and with or without weighing, either in bulk or in sacks, into barges, wagons, warehouses or silos. In normal conditions the average delivery is at the rate of 100 tons per hour per conveyor. They are of two types: floating and steam-driven or travelling on rails and electrically driven.

The floating elevators, four in number, are carried on steel pontoons and have a 200-h.p. steam engine driving two large air pumps connected by pipe systems to flexible suction tubes, which are plunged into the grain to be discharged from the ship.

The quayside elevators, two in number, are mounted on portal frames, whose travelling speed is 20 metres a minute. Each motion is governed by electric motors, the principal motor of 230 h.p. driving a 4-stage centrifugal turbine having automatic regulating gear and serving two independent pipe systems. In these pipe systems the air pumps or turbines create currents of velocity sufficient to lift the grain and hold it in suspension. A first enlargement in the piping reduces the velocity and supporting power of the air, allowing the grain to fall by gravity

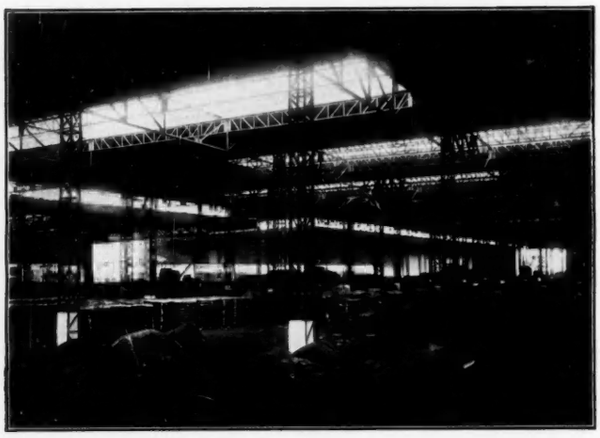
The Port of Dunkirk—continued

into a bin on the machine; whilst the dust, being lighter, is carried on to a point where a second and greater enlargement in the piping allows it also to fall in its turn.

Each of the floating machines has self-acting balances, fed by shoots through which the grain passes, and after being freed from its dust is carried on by a chain of buckets. One of these machines, generally used for bulk discharge into silos or into barges, has only one automatic balance to weigh 1,000 kilos or 1 ton. The others have each ten balances to weigh 100 kilos, permitting them, moreover, to deliver in sacks to wagons or lorries. These balances, however, can be thrown out of gear when weighing is not required.

The quayside travelling conveyors, on the other hand, have neither weighing nor bagging gear, since the silo or elevator to which they directly discharge is well equipped for these operations.

Dust extraction and aeration are the great advantages derived from the pneumatic method of unloading grain, which after the agitation through which it passes is cleansed from all mustiness and improved in its keeping quality.



Photo] [Cayez, Dunkirk

Part of the Textile Shed.

The Grain Elevator, etc.

For the storage of grain in bulk the port has an important asset in the silo " Gaston Fichaux," situated at the inner end of Dock No. 5.

This silo, or elevator, is a huge structure of reinforced concrete, 42 metres in height, comprising 56 circular bins of 5-metre diameter and 42 square bins between them. Its total capacity is 15,000 tons.

The landing of grain for this silo can be done at a speed reaching 500 tons an hour, at the end of Freycinet Quay No. 10, under which run four endless band conveyors through a tunnel 250 metres long. On the other hand, the silo is served by a group of sidings directly connected to the " Dunes " sorting station near by. The grain thus stored is treated on the basis of nominal warehousing (" entrepot fictif ").

Three special bins, fitted with piping through which a 24-h.p. blower drives a strong current of fresh air into the mass of grain, serves for the treatment and cure of any that has become heated.

The grain-handling plant also includes numerous self-acting grabs, which can be fitted to any of the cranes, and eight portable shoots for use in bagging grain unloaded by grab.

Stores and Sheds.

Covered stores and sheds are a necessity in a commercial port, arising from the very efficiency of its handling equipment and the volume of its traffic. The more rapid the loading and discharge of vessels, the greater becomes the accumulation of goods at the quayside, and it is essential that these goods, often perishable, should be sheltered from the weather. This necessity is especially felt at Dunkirk, which is, above all, a port of transit.

The stores and sheds number 30, covering an area of about 93,600 square metres. They are all accessible to lorries, if not to the rolling stock of the Northern Railway Company, and the greater number of them have verandah roofs over external sidings, so that loading is always done under cover.

One shed alone called the " Leon Herbart " shed, occupies a space of 32,000 square metres. This is especially reserved for textiles, as well as another shed recently built, covering 7,176 square metres and intended for the reception of cotton.

The quantity of goods that can be housed in all the stores and sheds is estimated at about 200,000 tons.

Customs Warehouse.

The actual Customs Warehouse has been built as an annexe to the Headquarters Building, in which are the directors' and inspectors' offices. It has four stores, of which two are multiple-storeyed, and has a floor area of 6,187 square metres.

Sugar Warehouses.

Situated on Jetty No. 1, between Docks Nos. 1 and 2, these warehouses were established by decree of October 26th, 1895, on the requisition of the Chamber of Commerce. They are composed of two similar large buildings in brick and stone, of four storeys, each building being divided into three compartments by walls from ground level to above the roof, to limit the fire risk. The floor area is 36,000 square metres and the total capacity of the warehouses is 46,000 tons.

The handling of sacks is effected by means of hydraulic sack-lifts of 100-kilo capacity, which can lift 60 sacks an hour to the third floor.

Every owner depositing sugar can demand a receipt warrant which is transferable by endorsement. Compulsory insurance is effected through the Chamber of Commerce.

Wool Warehouse.

This warehouse, in commission since March, 1900, was put up to ensure supplies for the manufactories of Lille, Roubaix, Tourcoing, etc., whose consumption of this material is considerable.

Dunkirk holds first place among French ports for the import of wool—131,000 tons in 1931.

The warehouse, which is in the centre of Jetty No. 2, covers an area of 4,450 square metres and will hold 17,000 bales of wool of the Argentine type. Handling is effected by means of electric lifts at a speed of 50 cm. a second.

Cold Store.

This store was erected during the war, at the end of Jetty No. 3, by the Union Company. It takes in perishable produce such as meat, fats, butter, eggs, cheese, fruit, etc., which are kept at a freezing temperature. It will hold 3,000 tons of meat. This is taken direct from the ships' holds, without other handling causing damage to goods, and despatch is made in the same way in insulated wagons brought right into the store.

Graving Docks.

Shipmasters find at Dunkirk all facilities necessary for executing the repair and overhaul of vessels. These facilities include four graving docks, whose main features are shown hereunder:

Dock No.	1	2	3	4
	Metres	Metres	Metres	Metres
Total Length	111·50	111·50	90·00	190·50
Effective Length	105·00	105·00	80·00	185·50
Width at Cope	20·60	19·60	19·60	27·50
Width at Sill Level	16·00	14·00	14·00	21·00
Level of Sills	—2·05	—0·55	0·55	—2·10

Dock No. 4 is furnished with a compressed air service and with a tower crane of 4 to 8-ton capacity.

During the year 1932 the No. 1 dock was furnished with a 5 to 10-ton electric crane, which will be most useful in ship repairing.

The dry docks have a pumping station accommodating the dewatering pumps and the compressing pumps to supply hydraulic pressure water for operating the lock gates. All these pumps, which were originally steam-driven and which were in consequence liable to frequent breakdown, were recently replaced by electric pumps. The dewatering is done by four main pumps delivering 1,000 litres (200 gallons) per second.

The Floating Dock.

A 12,000-ton floating dock was launched in 1931 and completed in 1932. It is fitted with all the latest devices to afford ship repairers every assistance in the maintenance and repair of vessels. Besides the usual keel-blocks, bilge-blocks and side shores, its auxiliary services comprise two pumps and tanks for fuel oil, air compressors, fresh water and sea water services, two slewing and travelling 10-ton cranes, electric mains for light and power, etc.

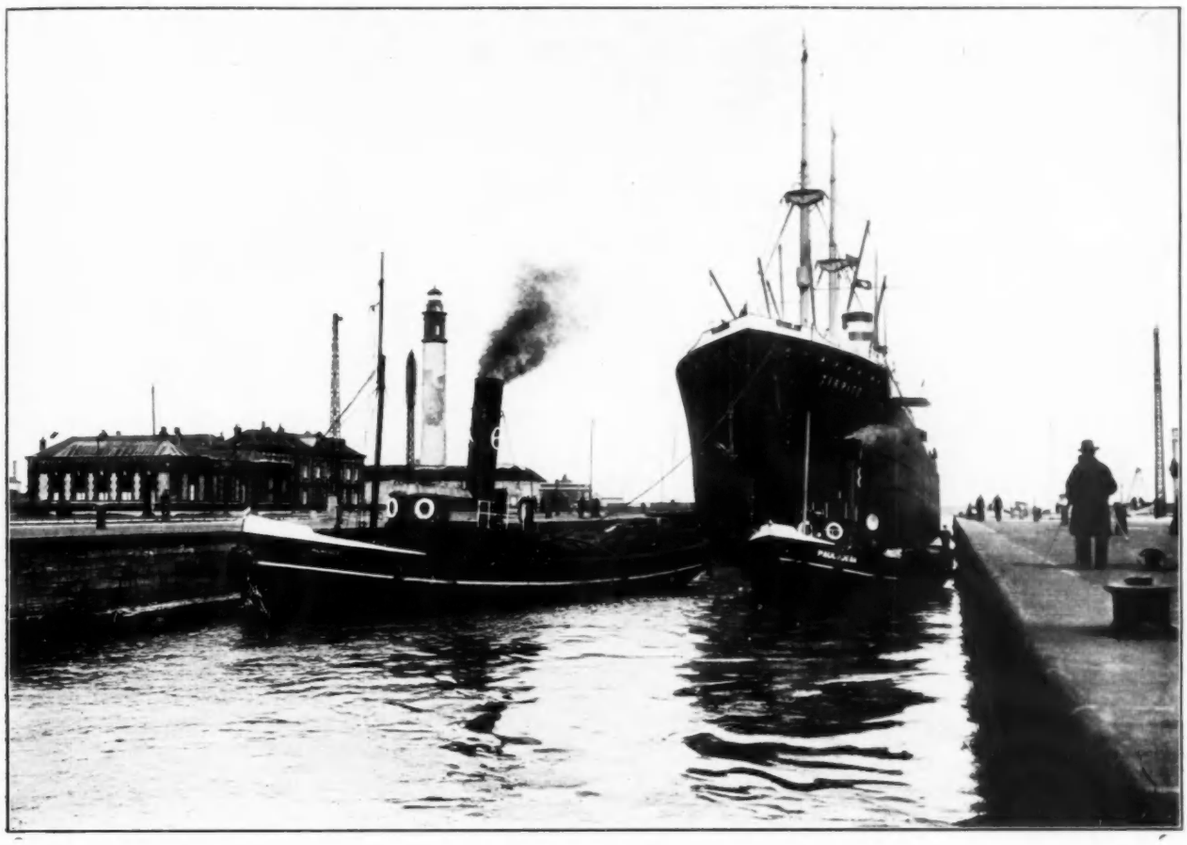
This dock supplements the largest graving dock, No. 4, which of recent years has been always occupied and has been able to receive only about half the vessels that wished to use it.

The Slipway.

Dunkirk possesses also a slipway or inclined plan enabling vessels to be hauled out of water and repaired without having recourse to a dry dock.

The slipway, which is owned by the Chamber of Commerce, is leased by the Chamber to a ship repairing company. It can take any ship not exceeding 1,000 tons in weight or 75 metres in length.

The Port of Dunkirk



Photo] *The Trystram Lock.* [Cayez, Dunkirk

Photo] *No. 5 Dock and Transporters.* [Cayez, Dunkirk

The Port of Dunkirk—*continued*

The Gridiron.

Vessels of 500 tons register, with keel not exceeding 58 metres long, have at their disposal in the outer harbour a gridiron with blocks at a height of 2m. 50cm. above zero on the marine charts.

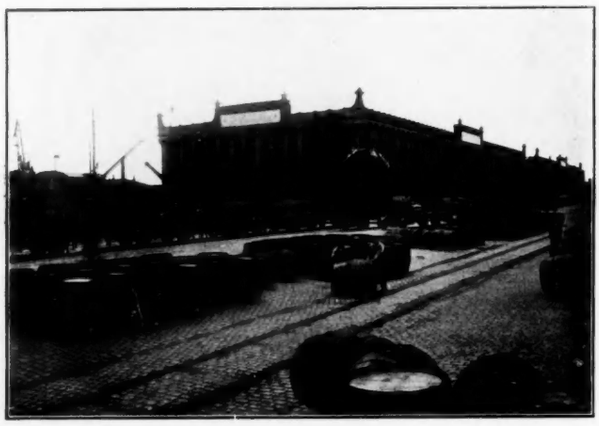
Isolating Booms and Pumping Stations.

By reason of the nature of their cargo, petroleum tankers constitute a danger for the ports at which they call, but it may be confidently affirmed that this danger is non-existent at Dunkirk, where vessels carrying inflammable material are surrounded by barriers offering full protection being berthed in a part of Dock No. 4, which is isolated by a floating boom.

The west quay of that dock is provided with special equipment consisting of pumping and heating stations, with underground pipe lines for the discharge of tankers, the pipes leading to tanks outside the port area.

By excess of precaution, a mess-room is provided on shore for use by the crews of tankers, which are forbidden to have fires on board while in port.

Traffic in heavy oils has increased at Dunkirk, especially since the war.



Photo] ***Sugar Warehouses.*** [Cayez, Dunkirk

Electricity for Lighting and Minor Power Supply.

The distribution of current required for illumination, for work on the quays and dumping grounds, in the stores and sheds, is effected by a special network installed by the Chamber of Commerce; with 3-phase high tension current at 15,500 and 5,000 volts, transformed to 3-phase low tension at 120-210 volts. There are four sub-sections.

This system feeds the installations of small power scattered over the quays and belonging either to the Chamber of Commerce or to individuals. The lamps connected with this system number about 500, two-thirds of them being 300-watt and one-third 500-watt lamps.

In addition to this working illumination, the town and the State maintain, at joint expense, an illumination for safety continued throughout the night. This is done by electricity and also by gas.

Fire and Salvage Corps.

To guard against danger of fire, in addition to a permanent fire brigade, lodged near the centre of the Freycinet Docks and in touch by telephone with all parts of the port, the Chamber of Commerce employs a special equipment, comprising: Three motor pumps; a fire-float fitted with powerful pumps and kept always under steam; four foam extinguishers, on wheels; automatic sprinklers in the stores and warehouses; 123 hydrant and first aid stations. These provisions ensure that apparatus is always ready to hand immediately for dealing with any outbreak of fire from its very commencement.

Radio-Telegraphy.

The radio-telegraphy station for transmission and reception, which is run by the Chamber of Commerce, has the call-sign "F.F.F." Its range in telegraphy is about 100 miles and rather less in telephony. Calls to ships are sent on a 600-metre wave length and radio telegrams on 750 and 830 metres. The station can receive on any wave length from 300 to 2,500 metres.

Communications with ships must relate only to the business of the port: arrivals, loading, pilotage, towage, etc. Radio telegrams addressed to the port manager may be communicated to ships' suppliers, brokers and consignees.

Towage.

The towing service, which was originally included in the concession made to the Chamber of Commerce, is now entrusted to a special company, which also undertakes the movement of vessels in the docks.

Headquarters and Administration

All the administrative services connected with sea-borne trade have been centralised by the Chamber of Commerce in a large building erected at the north-east corner of the Freycinet Quay No. 1, and known as the Central Establishment.

This building, which was opened in 1890, provides accommodation for the following: On the ground floor—Customs offices, shipping offices and statistical office; postal and telegraph office and accommodation for the commercial services of the Northern Railway. On the first floor: The offices and reception rooms of the Chamber of Commerce; the accountancy; a public library; a naval museum; the Chamber of Marine Brokers; the Chamber of Shipping Agents, and the Arbitration Committee.

Policing of the Port.

Among the services subsidised by the Chamber of Commerce, special mention must be made of the policing of the port. The watching of goods lying on the quays is entrusted to a special brigade of the municipal police, including a number of men mounted on bicycles, who patrol day and night the various installations of the port, and to a body of commercial guards who are empowered to summon offenders and whose duties consist particularly in the protection of goods and the quays.

This organisation, which is anterior to the Revolution, has always functioned with great regularity and to the general satisfaction. The rates of pay are in accordance with a tariff fixed by the Chamber of Commerce and approved by Government.

Public Library. Educational Facilities.

By virtue of the functions entrusted to Chambers of Commerce as public institutions, these organisations are called upon to foster all undertakings of public utility and to promote the development of commercial studies. To this end a library has been formed which now comprises about 35,000 volumes, and which is open to the public daily.

In addition to official publications, such as Statutes, Bulletins, Guides, Directories and official statistics of various countries, readers can consult a large quantity of records and documents and other publications dealing with all branches of commercial, industrial and legal sciences.

Catalogues of easy reference are provided. The sections most amply furnished are those of Political Economy, Jurisprudence, Geography, Travel, Railways, Transport, Marine, Arts and Manufactures, Fine Arts, Languages, etc.

The Chamber also holds at the disposal of readers the collection of its own records and archives since its foundation in 1700; these are of the greatest value for the study of the economic history of the region.

In order to encourage commercial and professional studies, the Chamber also subsidises courses of lectures given in various educational establishments in the town, notably on foreign languages, accountancy, technical subjects, etc. The Chamber also controls a School of Seamanship and Navigation, where candidates can qualify as lieutenants and captains in the mercantile marine, masters of fishing craft, engineer pupil officers, and first and second class engineers.

Museums.

Under the same powers as before indicated, the Chamber has created a museum where samples may be found of all the natural products and manufactured articles which go to make up the shipping trade of Dunkirk.

This commercial museum, whose importance increases daily, has been installed in a building erected for the purpose and adjoining the central establishment. It contains four showrooms. Having been organised with a view to practical usefulness, it aims at providing enquirers with useful information, such as origin, destination, nature and treatment or transformations of the products of which samples are shown; the methods of identifying them and of following them through their various stages of manufacture, etc.

The marine museum, which is an annexe of the commercial museum, is lodged on the first floor of the Central Establishment building. It contains a most remarkable and valuable collection of models of ships, types of the local shipbuilding industry throughout the ages: corsairs, whalers, fishing boats, etc., from the primitive boats to modern cruisers.

Labour.

One of the most important elements which have contributed to the high reputation which the Port of Dunkirk justly holds in the commercial and shipping world is the quality of the local labour.

The Port of Dunkirk—*continued*

The methods employed by the Dunkirk dockers in loading and stevedoring have considerably raised in the social scale a profession which here requires a real apprenticeship and which demands qualities of courage and strength which are not possessed by everybody.

The Dunkirk Dockers' Syndicate, which is the successor of the ancient Corporations of the "Loaders and Unloaders," of the "Shoulder Carriers," and of the "Hold Fast," comprises some 3,500 members, governed with strict discipline, and is far from being open to anyone who cares to enter it.

In Dunkirk work is generally undertaken by the job and the men make up their own gangs, the stronger men being allotted the hardest work, whilst the easier work is given to the younger and to the elder members.

About 100 women, mostly war widows or orphans, are also employed as cleaners and in the repair of sacks.

General Traffic

Regular Shipping Lines.

With the exception of the war years 1914-18, the Port of Dunkirk has kept increasingly busy for more than a century. Whilst in 1850 the tonnage of ships and merchandise barely reached 300,000 tons and 200,000 tons respectively, the figures for the last few years are as follows:—

	Ships		Merchandise
	No.	Tonnage	Tons
1929	7,490	11,601,855	5,400,861
1930	7,546	11,765,635	4,952,691
1931	6,469	10,546,279	4,781,461

Dunkirk thus ranks third in importance of the French ports, coming immediately after Marseilles.

This situation is due to well-defined causes and is mainly explained by the port's proximity to the northern region, which is unequalled both from the industrial and from the agricultural standpoint, and of which it is the natural outlet, whilst at the same time supplying it with the produce and raw materials required by its population and industry.

The four million inhabitants who form the population of that part of French territory which lies between the Somme and the Belgian frontier are the most active and hard-working section of the French people. In the Northern region intensive farming is carried on side by side with the most varied industries, and in order to appreciate the importance of Dunkirk as a commercial centre it is sufficient to recall the economic importance of this region, where, by the side of the Briey iron ore deposits, are to be found the richest coalfields, and where the well-cultivated plains of Flanders, Artois and Picardy are spread out.

Dunkirk is the main provider of this territory in alimentory produce and manures, and in the raw materials required by its mills and factories.

Thus nine-tenths of the French imports of Chilean nitrate pass through Dunkirk, as well as some 740,000 tons of grain for the supply of flour mills; 131,000 tons of wool and 107,000 tons of textile fibres, such as cotton, flax, hemp, jute, etc., for the textile factories of Lille, Roubaix, Tourcoing, Armentières, etc.; 216,000 tons of oil seeds for the oil refineries; 121,000 tons of timber for saw mills, building works and furniture masters; 490,000 tons of metals, iron ore, cast iron, steel, copper, lead, tin, zinc, manganese, etc., for foundries, iron and steel works and machine makers; 465,000 tons of petroleum products.

These materials come to Dunkirk from all parts of the world, and in return Dunkirk ships to all parts manufactured goods, flour, raw and refined sugar, wrought and ornamental iron work, bar iron and steel, rails, machinery, metal goods, linen and jute yarns, cotton and woollen goods, canvas, carpets, tapestry, etc.

This trade is mainly carried on by the regular services maintained by the shipping companies. Sixty-nine lines, of which 26 are owned by French companies, call regularly at Dunkirk. Twenty-one maintain services with European ports, 13 with American ports, 13 with Asiatic ports, 12 with African ports, and 7 with Australian ports, whilst 3 are plying between French ports and Corsica.

The tonnage of merchandise received and sent by these lines was as follows in 1931:—Europe, 280,000 tons; Asia, 439,000 tons; America, 411,000 tons; Africa, 929,000 tons; Australia, 60,000.

The coasting trade between Dunkirk and French and Corsican ports totals 118,000 tons.

Although these figures only represent 60 per cent. of the general tonnage, they indicate, nevertheless, the extensive range of the port's activities and the importance of its relations with the chief centres of production and the leading markets of the world.

Whatever the nature of the raw material required, or whatever its country of origin, Dunkirk is in a position to ensure regular supplies within the shortest possible time.

Passenger Services.

Many of the companies which maintain a regular cargo service with Dunkirk also carry passengers.

The A.L.A. (England, Lorraine, Alsace) Co. have a daily service between Dunkirk and London *via* Folkstone, to which four very comfortable boats are allotted. The boats leave Dunkirk nightly at 1.15 a.m., arriving at Folkestone at 5.30 a.m., whence London is reached at 7.40 a.m. The departure from London is at 11 p.m.; from Folkestone at 12.40 a.m., and Dunkirk is reached at 5.30 a.m.

The company's packets work in relation with the North of France Railway, which ensures connections between Dunkirk and Belgium, Alsace-Lorraine, Luxemburg, Switzerland and Italy; and with the passenger trains of the Southern Railway to and from London, and of the L.M. and S. Railway to and from the Midlands and the North of England and Scotland. At certain seasons the company issues return tickets at reduced fares and 15-day excursion tickets, whilst it has a special tariff for war-wounded, for reserve officers, and for excursions with a minimum of 25 tickets.

The boats are fitted to ensure a comfortable night journey to passengers of all classes. In 1931, 116,962 passengers availed themselves of the Dunkirk-London service.

As regards goods service, this line offers valuable advantages by reason of sailings every night, which allow of the reception of goods until a late hour and ensure rapid and regular delivery in London and in the chief English cities.

The A.L.A. Company carried, in 1931, 35,778 tons of merchandise, of which 28,257 represented exports and 7,521 imports.

The goods imported or exported are mainly articles of value, chiefly silks and other textiles, machinery, furniture, ladies' dresses, champagne, jewellery, etc.

During the season for early vegetables and fruits, a cargo boat leaves Dunkirk daily at 2 p.m., ensuring delivery in the London market by 3 a.m.

In addition, the "Deb Forenede Dampskihs" Company provides a weekly "mixed" service of passengers and goods between Dunkirk and Esbjerg and the Baltic ports. The s.s. "A. P. Bernstorff," which is affected to this service, leaves Dunkirk every Tuesday and Esbjerg every Saturday. She is provided with a cold storage installation. The journey takes 24 hours, without transhipment. The total tonnage of goods transported by this company in 1931 amounted to 7,090 tons.

Industry

The Dunkirk region is particularly favourable to industrial development. On account of the means it provides of daily communication with the chief European and extra-European centres of production and exchange, the port is in a position to supply all classes of raw materials on the spot, whilst offering all facilities for the shipment of manufactured goods. These advantages, combined with those resulting from its proximity or easy access to French and foreign coalfields, explain the increasing importance and development of its suburbs—St. Pol-sur-Mer, Petite-Synthe, Coudekerque-Branche, Rosendael, etc. As a matter of fact, most industries carried out in Northern France are also carried out in the immediate neighbourhood of Dunkirk, in addition to purely local industries, such as shipbuilding and fishing.

Shipbuilding.

From the earliest times Dunkirk has been famous for its shipbuilding yards. The superiority of Dunkirk-built ships may be considered to have been responsible to a certain extent for the superiority of its seamen in the old days. To-day the building of wooden ships has not completely ceased, but it has given way to the building of iron and steel ships, in which many very prosperous yards, employing some thousands of workmen, are engaged.

The ship-building and ship-repairing yards of Dunkirk provide the necessary complementary installations required for the proper working of an important modern port. They not only allow of the building of new ships of all classes and tonnage— passenger boats, cargo boats, dredgers, tugs, floating docks, etc.— but also of all classes of repairs, whether to hulls or machinery.

Fishing.

Deep-sea fishing, which was formerly one of the most important industries of Dunkirk and Gravelines, only provides work to-day for a small number of vessels, which are, however, fairly fully employed. A dozen or so of small sailing vessels, some of which have lately been fitted with motors, sail every year for cod fishing in Icelandic waters. Departure takes place generally in February, and the "Icelanders," as the men are called, come back about the first fortnight in August.

The Dunkirk men make a speciality of line fishing and bleed the cod on the spot immediately after capture. Their fish enjoys, in consequence, a peculiar popularity among lovers of cod fish on account of its not having been kept on ice.

The Port of Dunkirk—*continued*

On the average, the men bring back from Iceland yearly from 800,000 to 900,000 fish, of a value, at present rates, of about five million francs.

Fishing within French territorial waters has, however, remained much more important. The industry utilises for Dunkirk and Gravefines about 200 boats, employing about 500 men. The proceeds of this industry amount to about 12 million francs yearly.

Projected Developments

Dunkirk in the Near Future.

We have seen from the preceding description what Dunkirk was in the past and what it is to-day. We have followed its progress from the discovery of the possibilities of its favourable geographical situation, first to the status of regional port and then to that of an important international port, with the economic development of its hinterland in the 19th century, and we find it to-day fully equipped to meet the requirements of modern trade. But it is not considered that the ultimate stage of development has been reached, that science has said its last word, and that there is no possibility of improving the present installation and facilities. The authorities which have brought the port to its present state of efficiency are of opinion that, in the national interest, development cannot be allowed to cease.

Experience has proved that, with each extension of the port, traffic has increased to an extent in excess of estimates, whilst an examination of trade figures shows that the 4,800,000 tons of merchandise handled in 1931 are far from approaching the total tonnage which should normally pass through the port. There are therefore important leakages through other channels, and it is necessary that Dunkirk should at any cost be put in position to handle by itself the whole of the sea-borne trade of the important region of which it is the natural outlet.

Plans and estimates for developments have been prepared, a programme of work has been elaborated in accordance with the Law of 22nd October, 1919, and the execution of this programme is already in progress.

These works are the following: (a) The construction of a new drainage outlet canal from the waterways on the east of the town; (b) the construction of a new deep water entrance to the harbour; (c) the construction of a new oil dock which will allow of returning to general shipping the section of Dock No. 4 now reserved for the oil trade; (d) the construction of a landing stage for deep draught vessels and the provision thereon of the necessary equipment for the loading and discharging of such vessels; (e) the construction of a sixth dock communicating by a lock with the inland waterways; (f) the construction of an entrance lock of ample dimensions.

The drainage canal mentioned under (a) is a matter of local necessity. The low-lying plain east of the town, which is below tide level, would be flooded if it were not protected, on the one hand, by flood prevention works, and on the other hand by a drainage system which prevents the accumulation of fresh water at this point. For this purpose a whole system of drainage trenches and canals, with gates, had been created, and until recently a canal acting as main collecting drain for the whole system encircled the western docks of the port and prevented any further extension of those docks. It was decided to replace this collecting drain by a new canal to be cut at the eastern end of the town, and this has now been done, so that nothing stands in the way of the extension of the docks westward and work in this direction is now in progress.

The new entrance will be inclose proximity to the roadstead, with a depth of 7 to 8 metres below the zero of marine charts, and consequently accessible to the biggest ships of the present day. It will be 270 metres wide and will require the construction on the western side of a new solid jetty 750 metres long and the extension of the present eastern jetty by 700 metres.

The angle comprised between the axes of these two jetties covers a superficial area of 80 hectares (nearly 200 acres), which will form the new outer harbour.

In the southern part of this outer harbour the landing stage will be built, providing a series of berths of a depth of 10 metres below zero of marine charts, and there also will be located the lock, giving access to the new turning basin, upon which Docks Nos. 5 and 6 and the Oil Dock will open.

The landing stage will be 350 m. long, with an actual working length of 300 m., and will have a width of 50 m. It will have railway tracks communicating with the sorting station, and the most up-to-date equipment for loading and unloading cargo.

The lock will be 40 m. wide, with a length overall of 325 m., the length between gates being 280 m. The gate sills will be at a depth of 8 metres below the zero of marine charts.

Dimensions, etc., of Docks and Quays.

	Depth below zero Metres	Length of Quays Metres	Number of Berths
I. Docks.			
No. 5	—6·00	2,063	14
Nos. 3 and 4	—4·50	3,275	20
Nos. 1 and 2	—2·50	3,058	22
Old Docks ...	—0·90	2,230	12
II. Grounding Basin		2,017	9
Totals ...		12,643	77
Water Area	73 Hectares (180 acres)		

Bremen's Seagoing Shipping in April, 1933

In sea-borne shipping traffic for Bremen account 511 vessels with 544,850 net registered tons arrived. Thus traffic has decreased considerably compared with the previous month in registered tonnage: the number of vessels fell by 16 per cent., in tonnage by 10 per cent. The reason for this can be seen in the decrease in imports and exports given below. Compared with April, 1932, the number of vessels increased by 81, or 19 per cent.; the tonnage decreased by 89,666 net registered tons, or 14 per cent.

In the first four months of the year, altogether 2,069 vessels arrived with 2,273,220 net registered tons, against 1,683 vessels with 2,498,251 net registered tons in the same period of the previous year. The number of vessels was thus 386, or 23 per cent. greater, but the tonnage was 225,029 net registered tons, or 5 per cent., less. As previously reported, the considerable increase in the number of ships is due to the growth in coastal traffic, particularly in grain traffic from the German Baltic ports by motor vessels and sailing vessels.

Sea-borne goods traffic of the five most important Weser ports was considerably less than in March. Imports and exports together only amounted to 330,500 tons. That is 89,200 tons, or approximately 20 per cent. less. Imports with 215,200 tons decreased by 51,300 tons, or 19 per cent., particularly piece goods, oil seeds, grain and coal. Cotton and timber also decreased seasonally. Exports with 115,300 tons decreased by 37,900 tons, or 25 per cent. The reduction in the export of coal had the greatest effect here; this was 31,000 tons less than that of the previous month and was only about 17 per cent. of the quantities exported in January and February. Compared with April, 1932, total traffic decreased by 52,700 tons, or 14 per cent., i.e., imports decreased by 55,600 tons, or 20 per cent., while exports showed 2,900 tons, or 3 per cent. more.

During the first four months of the year, altogether 1,574,800 tons were imported and exported, against 1,512,900 tons in the same period of the previous year. There is thus an increase of 61,900 tons, or 4 per cent. The percentage increase, which up to the end of March amounted to 10 per cent., has therefore considerably decreased by the unfavourable April result. In detail only exports showed an increase, while imports with 928,500 tons lost 74,900 tons, or 7 per cent., in the first place through the decrease in grain (—118,500 tons) and coals (—38,200 tons). Cotton and blubber also showed considerable decreases, and only piece goods, rice, timber and phosphate exceeded the quantities of the previous year. On the other hand, exports with 646,300 tons were 136,800 tons, or 27 per cent. larger. This increase, besides more extensive shipments of potash salts and iron, is chiefly due to considerably larger exports of coal in January and February, against which there was only a small volume of exports in the same months of the previous year.

The Institute of Transport.

The under-named have been elected by the Council of the Institute of Transport to take office on October 1st, 1933.

President: William Whitelaw (Chairman of the London and North-Eastern Railway).

Vice-Presidents: C. le M. Gosselin (Managing Director, H. Viney and Co., Ltd., Preston); Sir James Milne, C.S.I. (General Manager, Great Western Railway); F. Handley Page, C.B.E. (Managing Director, Handley Page, Ltd.); T. E. Thomas (General Manager, London County Council Tramways); W. V. Wood (Vice-President, London Midland and Scottish Railway).

Past Presidents to serve on the Council: Colonel Sir Joseph Nall, D.S.O., T.D., D.L., M.P.; Roger T. Smith; Sir Josiah C. Stamp, G.B.E.; the Hon. Sir Arthur Stanley, G.B.E., C.B., M.V.O.; Frank Pick; Sir David J. Owen.

Hon. Treasurer: Sir Henry P. Maybury, G.B.E., K.C.M.G., C.B.; Hon. Librarian: R. Bell, C.B.E.; Hon. Solicitors: Joynson-Hicks and Co.

Italian Harbour Affairs

THE Istituto Centrale di Statistica at Rome has published the figures regarding shipping at Italian ports during the first quarter of 1933, and which are summarised as follows:—

ARRIVALS AND CLEARANCES

		No. Ships	N. R. T.	Goods Unloaded (Tons)	Goods Loaded (Tons)
Savona	1933	732	712,549	370,727	58,499
	1932	605	625,706	353,345	48,613
	1931	577	531,811	312,360	43,685
	1930	514	592,661	453,068	25,950
	1929	477	452,477	402,563	25,668
Genoa	1933	2,355	4,784,854	1,372,709	241,235
	1932	2,135	4,504,031	1,232,416	215,675
	1931	2,263	4,888,396	1,495,876	222,458
	1930	2,448	4,826,055	1,609,071	250,331
	1929	2,462	4,895,324	1,711,726	267,127
Leghorn	1933	1,816	1,910,791	303,512	90,473
	1932	1,653	1,865,195	306,379	90,130
	1931	1,558	1,750,604	284,118	83,113
	1930	1,686	1,756,889	368,070	106,051
	1929	1,618	1,541,464	358,022	82,726
Civitavecchia ...	1933	687	907,584	188,450	26,887
	1932	572	870,941	211,359	18,953
	1931	589	889,933	207,757	17,035
	1930	669	952,025	188,198	16,326
	1929	588	693,166	195,922	24,487
Naples	1933	4,342	4,466,098	346,334	81,837
	1932	4,115	4,654,954	384,072	92,635
	1931	4,168	4,777,197	398,911	104,928
	1930	3,935	4,859,363	429,726	79,240
	1929	3,910	4,999,036	431,686	78,200
Brindisi	1933	782	1,208,399	35,478	10,878
	1932	588	1,251,343	28,904	1,927
	1931	663	1,045,395	34,584	3,710
	1930	590	1,051,864	24,469	3,457
	1929	551	900,988	9,168	3,116
Bari	1933	802	776,810	53,809	8,645
	1932	770	686,636	88,411	10,805
	1931	719	672,826	67,966	15,539
	1930	782	667,632	69,906	17,201
	1929	824	652,534	86,092	17,842
Ancona	1933	957	664,115	63,046	12,632
	1932	718	593,581	76,545	4,927
	1931	825	533,607	117,828	10,377
	1930	1,373	631,741	180,797	11,411
	1929	936	538,131	96,814	18,897
Venice	1933	1,749	2,124,838	511,741	110,751
	1932	1,759	2,128,386	450,847	97,993
	1931	1,433	1,761,837	476,081	130,102
	1930	1,535	1,822,999	528,823	101,488
	1929	1,466	1,759,725	489,330	99,310
Trieste	1933	6,838	2,527,581	326,103	135,803
	1932	7,124	2,638,290	410,873	138,870
	1931	6,552	2,263,770	415,394	179,144
	1930	6,944	2,445,136	464,794	222,309
	1929	6,149	2,302,920	522,990	201,108
Fiume	1933	2,442	900,638	92,321	39,169
	1932	2,465	978,393	56,306	46,654
	1931	2,606	1,092,509	75,867	67,137
	1930	2,679	1,260,364	113,902	100,247
	1929	2,451	1,075,437	101,019	72,005
Messina	1933	1,706	1,084,481	65,481	83,070
	1932	1,752	874,894	71,603	26,902
	1931	1,649	1,039,697	74,075	30,095
	1930	1,362	1,007,026	83,666	34,534
	1929	1,376	910,876	92,468	29,005
Catania	1933	934	847,550	87,280	46,462
	1932	1,216	969,409	93,102	40,190
	1931	1,059	959,755	89,227	53,236
	1930	1,262	983,257	105,324	54,153
	1929	1,192	936,886	115,023	53,204
Syracuse	1933	666	671,424	23,809	12,655
	1932	625	676,788	20,264	13,734
	1931	537	729,004	13,007	13,153
	1930	750	850,600	12,511	11,456
	1929	614	736,831	23,975	10,155
Palermo	1933	1,565	1,687,035	111,911	45,467
	1932	2,482	1,665,814	105,152	38,345
	1931	1,132	1,874,903	126,104	41,997
	1930	1,505	1,537,890	147,232	55,228
	1929	1,555	1,523,374	138,088	39,519
Cagliari	1933	579	396,721	51 513	80,956
	1932	458	451,209	47,865	71,407
	1931	574	431,507	58,060	69,325
	1930	459	429,864	61,577	59,359
	1929	519	391,553	59,279	64,665

The largest increase has been in imports at Genoa, and the largest Italian port is followed by Brindisi, Venice, Fiume, Palermo and Cagliari. In connection with goods shipped from Italian ports it should be noted that during the period under review there has been considerable progress at Sicilian ports, among which Messina has occupied the first place, in consequence of the action taken by the local authorities to further transhipment trade. However, in spite of the shipping crisis, there has been improvement also at Savona, Genoa, Civitavecchia, Brindisi, Ancona, Venice, etc. In order to obtain an idea of the situation of trade at Italian ports it is interesting to examine the figures concerning the imports of coal and cereals at the main Italian harbours, since the bulk of shipping is represented by these goods. From the above-mentioned statistics the following schedule may be worked out in this connection:—

	JANUARY—MARCH			
COAL	1933 Tons	1932 Tons	1931 Tons	1930 Tons
Genoa	587,885	501,674	671,510	745,740
Savona	228,493	266,490	298,734	376,529
Leghorn	183,198	172,902	157,582	243,824
Civitavecchia ...	71,778	144,361	151,309	220,733
Naples	179,937	175,338	158,902	200,783
Palermo	41,782	25,169	55,154	123,936
Catania	19 576	13,591	35,865	28,934
Trieste *	411	31,377	56,475	36,260
Fiume	5,488	5,840	7,298	24,191
Venice	227,029	201,169	225,315	302,448
Ancona	39,282	30,049	84,337	119,811
Bari	15,063	31,808	26,298	30,547
La Spezia	76,302	—	—	—
Brindisi	6,738	—	—	—
Messina	4,277	—	—	—
Syracuse	3,168	—	—	—
Cagliari	10,268	—	—	—
CEREALS.				
Genoa	109,519	183,639	247,296	171,789
Savona	—	1,503	670	3,186
Leghorn	15,831	24,761	24,866	10,817
Civitavecchia ...	670	13,140	21,036	10,733
Naples	44,184	88,033	130,523	54,189
Palermo	78	270	10,403	5,211
Catania	8,841	15,581	21,205	9,025
Trieste*	2,470	20,284	1,593	1,335
Fiume	16,968	1,122	760	—
Venice	25,717	37,579	51,027	25,754
Ancona	1,518	13,404	9,579	6,548
Bari	12,446	19,008	17,518	4,975
Brindisi	5,748	—	—	—
Messina	6,483	—	—	—
Syracuse	5,238	—	—	—
Cagliari	5,334	—	—	—

* January, 1933, only

As far as the imports of coal are concerned, during the first quarter of 1933 there has been considerable improvement, particularly at Genoa and in the Sicilian ports, though the figures have been lower than those for 1931 and 1930. In connection with the imports of cereals, it ought to be noted that during the first three months of 1933 an improvement has taken place only at Fiume, if the figures are compared with those for 1932, while if they are compared with those for 1930 an increase is noticed at Leghorn, Trieste, Fiume and Bari. However, the increase in the import of coal represents only a small share of the total progress which has been noticed at certain ports.

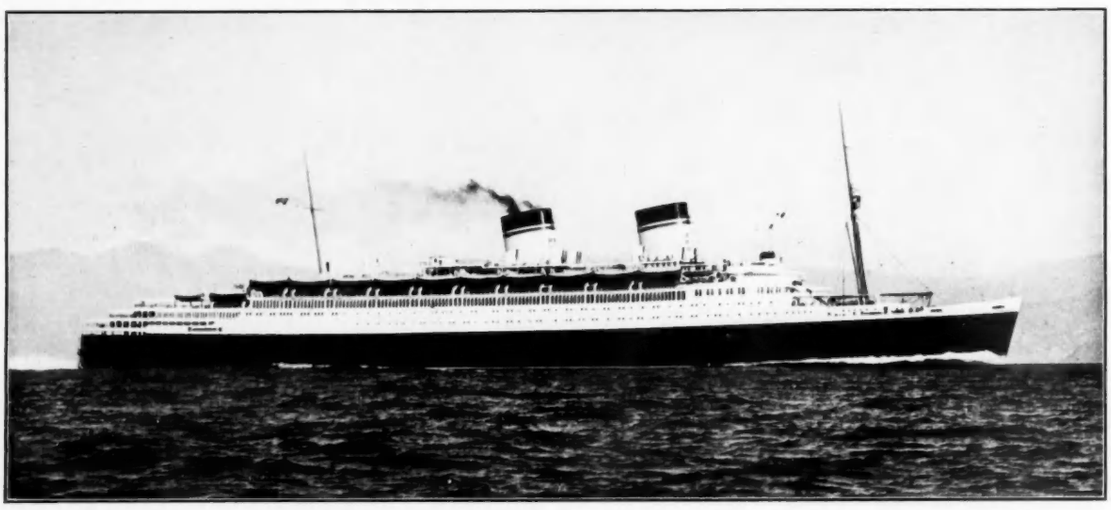
In the meantime, preliminary figures have been published regarding shipping at Italian ports during the month of April, 1933. According to these figures, shipping at Italian ports included the arrival of 17,273 ships representing 7,091,679 n.r.t. carrying 1,926,342 tons of goods and 272,070 passengers, and the clearance of 17,154 ships representing 6,967,105 n.r.t. carrying 687,353 tons of goods and 263,529 passengers. The total shipping at Italian ports during April, 1933, included the arrival and clearance of 34,427 ships representing 14,058,784 n.r.t. carrying 2,613,695 tons of goods and 535,599 passengers. Shipping at Italian ports during the month of April, 1932, included the arrival of 15,614 ships representing 6,616,398 n.r.t. carrying 2,038,030 tons of goods and 302,873 passengers, and the clearance of 15,643 ships representing 6,633,839 n.r.t. carrying 649,343 tons of goods and 300,565 passengers. Total shipping at Italian ports during April, 1932, included the arrival and clearance of 31,257 ships, 13,250,237 n.r.t., 2,687,373 tons of goods and 603,438 passengers. Exports from Italian ports have shown an increase during April, 1933, but progress has not been sufficiently large to neutralise the decline which has been noticed in imports.

Only the Port of Venice has yet published detailed figures regarding shipping during the month of April. According to information published by the Provveditorato del Porto di Venezia shipping during April at that port included the following figures:—

	Imports Tons	Exports Tons	Total Tons
April, 1933 ...	211,107	37,040	248,147
April, 1932 ...	218,796	40,649	259,445
Difference ...	—7,689	—3,609	—11,298

During the month of April, 1933, there has been a decrease of 4.35 per cent. in respect to the corresponding period of 1932, but the figures for the first four months of 1933 have shown an increase of 56,857 tons, corresponding to 6.64 per cent. in respect to the January-April, 1932 period, owing to the larger activity which has been noticed in the Port of Venice during January and February, 1933. It remains to be seen whether figures for May and June will show an increase or a decline before being able to foresee what will be the result of shipping at Venice for the first half of 1933.

Italian Harbour Affairs—continued



The "Conte di Savoia" (48,000 tons gross) on her trial trip from Trieste to Genoa, when she reached a speed of 29·4 miles per hour. The photograph was taken while entering the Port of Naples.

According to information from Ancona, the construction of the new port there is well forward. Matters at Capri, however, are not proceeding quite satisfactorily, according to reports published by the Italian press, since the construction of the harbour facilities to accommodate medium-size ships is delayed from year to year owing to the difficulties raised by the contractors.

Owing to recent storms, certain harbour facilities at Catania have been damaged, and the Minister for Public Works has been asked to undertake immediately the necessary repairs in order to ensure the safety of ships anchored in the port. At the same time, the Consiglio Provinciale dell'Economia (Chamber of Commerce and Industry) at Catania has taken up the question of towage and salvage services at that port.

Port of London Notes

London's Shipping.

During the week ended April 28th, 953 vessels, representing 817,968 net register tons, exclusive of those in ballast, used the Port of London. 419 vessels (629,344 net register tons) were to and from Empire and foreign ports, and 534 vessels (188,624 net register tons) were engaged in coastwise traffic.

* * * *

During the week ended May 5th, 901 vessels, representing 981,436 net registered tons, exclusive of those in ballast, used the Port of London; 456 vessels (801,648 net registered tons) were to and from Empire and foreign ports and 445 vessels (179,788 net registered tons) were engaged in coastwise traffic.

* * * *

During the week ended May 12th, 1,086 vessels, representing 1,021,891 net registered tons, exclusive of those in ballast, used the Port of London; 446 vessels (823,612 net registered tons) were to and from Empire and foreign ports and 640 vessels (198,279 net registered tons) were engaged in coastwise traffic.

* * * *

During the week ended May 26th, 1,014 vessels, representing 910,534 net register tons, exclusive of those in ballast, used the Port of London. 499 vessels (728,754 net register tons) were to and from Empire and foreign ports, and 515 vessels (181,780 net register tons) were engaged in coastwise traffic.

Tilbury Passenger Landing Stage.

Thirty-five vessels, totalling 399,659 gross registered tons, used the Tilbury passenger landing stage during the month of April, 1933. Altogether 7,828 passengers were embarked or disembarked at the stage, in addition to baggage and mails.

Increased Shipping at the Port of London.

Statistics issued by the Port of London Authority show that shipping using the United Kingdom ports during March, 1933, was 984,154 n.r.t. more than during the same month last year: 22.4 per cent. of this increase (220,904 n.r.t.) used the Port of London. The total figures for the month were 25,966,684 n.r.t. and 4,649,205 n.r.t. for the United Kingdom and London respectively.

Greater Use of Dry Docks.

Thirty-two more vessels, representing an increase over last year of 303,970 gross register tons, used the Port of London Authority's dry docks during the year ended March 31st, 1933. The total gross tonnage of vessels was 3,279,618 compared with 2,975,648 in 1932.

Bombay Port Trust

At a meeting of the Trustees of the Port of Bombay held on 18th April, 1933, the following were the main items of business disposed of:—

A preliminary report on the Revenue Receipts for the year ended 31st March, 1933, was considered. The aggregate receipts for the year amounted to Rs. 230.71 lakhs, or Rs. 15,000 in excess of the Revised Budget Estimates framed in January last. Allowing for an anticipated saving in revenue expenditure of about Rs. 8 lakhs on the original Budget Estimates, 1932-33, the deficit on the year's working is expected to be between Rs. 17 and Rs. 18 lakhs, which will be met from the Revenue Reserve Fund. The figures are not yet final.

An estimate of Rs. 10,584 was sanctioned for tiling the roofs of 178 units of Port Trust labourers' quarters at Antop Village.

The tender of the Cement Marketing Company of India, Ltd., for the supply of 600 tons Swastika brand Portland cement for repair and maintenance works during 1933-34 was accepted.

The Trustees placed on record their cordial appreciation of the valuable services rendered by their Consulting Engineers and Agents in London in meeting the difficulties of arranging for the placing and training of the junior engineers that have been sent by the Trust to Great Britain for advanced training in civil and mechanical engineering.

Bremer Lagerhaus-Gesellschaft, Bremen.

The decrease in world trade considerably influenced traffic at the Bremer Lagerhaus-Gesellschaft harbour installations in the year 1932. In quay business turnover, that had already fallen by 12.4 per cent. in the previous year, sank by a further 17 per cent. Exclusively exports were affected by this, while imports remained on the previous year's level. Grain traffic decreased by 12.2 per cent. This decrease took place only in the second half of the year, in which a decrease by 35.3 per cent. took place. Storage business showed a decrease by 55.8 per cent. With the decrease of business it was necessary to regulate administration and expenditure to the retrogressive movement. This has been carried out; while receipts decreased by 17.6 per cent., expenditure was reduced by 20.5 per cent., so that the account is more favourable than in the previous year. According to the account, total receipts amount to 6,126,000 Rm., leaving a surplus of 617,954 Rm. The State receives from the works for renovation reserve 190,423 (181,537) Rm., as special sum for renovation 95,211 (—) Rm., in interest for the working capital advances 9,000 (9,000) Rm., in interest for plant values 443,493 (425,228) Rm., altogether 738,128 (615,765) Rm. The company itself receives from the business 28,854 (31,484) Rm., that is 3.91 (5.11) per cent. in the previous year of the sum accruing to the State.

The Port of New York

Latest Data issued by the Bureau of Commerce

Value of Foreign Trade at the Port of New York.

IMPORTS and exports at the Port of New York during the month of February, 1933, were valued at $79,098,000, representing a decline of 31 per cent. as compared with the same period last year. In comparison with the value of foreign trade in the same period two years ago, in February, 1931, the decline amounts to 55 per cent.

	February		Net Change	
	1932	1933	Amount	Per Cent.
	$	$	$	
Exports	36,187,000	47,044,000	—10,857,000	—23·1
Imports	42,911,000	68,317,000	—25,406,000	—37·2
Exports and Imports	79,098,000	115,361,000	—36,263,000	—31·4

The value of foreign trade for the first two months of the year, January and February, was $166,533,000, being a decline of $58,328,000, or 26 per cent. from that of the first two months in 1932.

Vessel Movements in Foreign Trade.

Vessel entrances and clearances in foreign trade in the month of March, 1933, declined 14 and 12 per cent. respectively as compared with the same month last year. The entrances included 42 vessels in ballast and 360 with cargo, while in the clearances 83 were in ballast and 361 with cargo.

	March		Net Change	
	1933	1932	Amount	Per Cent.
Entrances, No. of Vessels ...	402	465	—63	—13·6
Clearances, No. of Vessels ...	444	512	—68	—13·3
Entrances, Net. Reg. Tonnage	2,196,794	2,451,353	—254,559	—10·4
Clearances, Net. Reg. Tonnage	2,356,896	2,597,147	—240,251	— 9·2

For the first quarter, January to March, the entrances and clearances were 13 and 12 per cent. respectively below the same period last year.

	January-March		Net Change	
	1933	1932	Amount	Per Cent.
Entrances, No. of Vessels ...	1,177	1,357	—180	—13·3
Clearances, No. of Vessels ...	1,249	1,418	—169	—11·9
Entrances, Net Reg. Tonnage	6,321,977	7,080,860	—758,883	—10·7
Clearances, Net Reg. Tonnage	6,567,530	7,187,161	—619,631	—8·6

Commerce at Port Newark.

The volume of water-borne tonnage handled at Port Newark continues greater than last year. During the month of March, 1933, the tonnage discharged by steamers and lighters amounted to 48,562 tons, a gain of 8,757 tons, or 22 per cent., over the same month last year. Forty steamers arrived during the month as compared with 22 in March, 1932, and 63 lighters moved in and out as compared with 21 last year.

The increase in tonnage handled is found entirely in cargo other than lumber, and amounted to 33,155 tons, a gain of 60 per cent. over last year. This included 12,623 tons of potatoes, of which 6,930 tons originated in Maine, and 5,693 tons in Canada. The volume of lumber received, amounting to 10,271,000 board feet, was 19 per cent. less than in the corresponding month last year. Lumber shipped inland out of Port Newark amounted to 11,249,000 board feet, of which 5,470,000 feet moved by railroad car and 5,779,000 feet moved by truck.

Water-borne Receipts at Port Newark.

	March		Net Change	
	1933	1932	Amount	Per Cent.
All Commodities (tons)...	48,562	39,805	+8,757	+22·0
Lumber (board feet) ...	10,271,217	12,753,494	—2,482,277	—19·5
Other than lumber (tons)	33,155	20,675	+12,480	+60·3

For the first quarter, January-March, 1933, the water-borne receipts at Port Newark show a gain of 47 per cent. over the same period last year. Receipts of lumber represent a slight decline, but this is offset by an increase of 98 per cent. in cargo other than lumber.

	January-March		Net Change	
	1933	1932	Amount	Per Cent.
All Commodities (tons)...	146,368	99,494	+46,874	+47·1
Lumber (board feet) ...	32,945,155	33,745,253	—800,098	—2·4
Other than lumber (tons)	96,950	48,876	+48,074	+98·3

Steamship Sailings.

Although scheduled sailings have been sharply curtailed during the last year, the steamship service out of the Port of New York still sets the pace for the North American Continent. In March, 1213 sailings were recorded, of which 430 were in foreign service.

The Caribbean-Mexican, United Kingdom and Far East routes still lead the foreign group in number of sailings each month.

While the March totals of intercoastal and coastal sailings are considerably ahead of that reported a year ago, the other domestic services show big reductions.

The peak day of the month was Saturday, the 18th, with a total of 64 sailings. Exactly one-half of this number sailed in foreign service and included 2 to the United Kingdom, 3 to the Baltic, 2 to Rotterdam-Antwerp, 1 to French Atlantic ports, 1 to Italy, 3 to South and West Africa, 8 to Caribbean-Mexican ports, 1 to Rio and the River Plate, 1 to Australia, 1 to the Far East, 1 cruise to the West Indies and 3 tankers.

The domestic sailings included 4 direct to the Pacific Coast, 8 to South Atlantic and Gulf ports, 6 tankers and 1 coal carrier.

Receipt, Storage and Export of Grain at the Port of New York.

The effect of the Ottawa Agreements, under which the United Kingdom placed a tariff against all but Empire produced wheat, is clearly shown in the statistics of grain handled through the Port of New York. Not only has American wheat been practically shut out of Great Britain, but also the flow of Canadian wheat in transit across the United States. Canadian wheat has for years been exported in increasing quantities by way of New York and other United States ports because of the lower transportation costs available on the American routes, particularly in the Barge Canal boats and in ocean liners seeking " bottom cargo " out of New York. Under British Customs regulations the free entry of Canadian wheat into the United Kingdom depends upon evidence not only of Empire origin but also of through consignment. Two test shipments of Canadian wheat *via* the United States since the passage of the British tariff act have been rejected as not showing evidence of through consignment and the interpretation of the British regulations is still a matter of negotiations.

The total exports of Canadian grain from New York to all points since January 1st have decreased 36 per cent. These exports were made out of stocks accumulated at the port prior to the closing of the 1932 navigation season and the enactment of the British tariff. The receipts since the beginning of the year have fallen off by nearly 90 per cent. and stocks in New York elevators, as of April 1st, are down 95 per cent. from the corresponding date in 1932.

The receipts of grain at the Port of New York during the month of March, 1933, amounted to 244,300 bushels, which is 89 per cent. below the figure of 2,234,800 bushels for the corresponding period last year. Receipts of grain at the port at this season of the year in the past were entirely by rail, since the canal is closed to navigation. This year, however, quantities of grain are being withdrawn from storage at Albany and moved down the Hudson River. The receipts from Albany since the first of the year amounted to 983,230 bushels, of which 166,000 bushels were received in the month of March.

The receipts for the first quarter of 1933 and 1932 by method of carriage was as follows:—

Receipts of Grain (Bushels).

	1933				1932	
	River	Rail	Total	*Coast	Rail	Total
January ...	202,000	103,000	305,000	—	1,040,800	1,040,800
February ...	615,230	65,800	681,030	1,265	3,054,500	3,055,765
March ...	166,000	78,300	244,300	1,200	2,233,800	2,234,800
Total ...	983,230	247,100	1,230,330	2,465	6,328,900	6,331,365

*Argentine Corn.

The decline in receipts during the first quarter of 1933 as compared with last year was 5,101,035 bushels, or 81 per cent.

The trend of the volume of receipts of grain by canal and rail for the past ten years is shown below. It will be noted that the total volume by both methods of carriage has steadily declined since 1924 except in 1931, when an increase occurred, that the volume moved by rail shows a general downward trend while the canal movement is, in general, upward.

The Port of New York—continued

Receipts of Grain at the Port of New York by Canal and Rail (Bushels).

Year	Canal	Rail	Total
1923 ...	21,217,834	99,462,200	120,680,034
1924 ...	23,667,900	109,333,600	133,001,500
1925 ...	32,766,800	97,645,900	130,412,700
1926 ...	28,898,759	87,182,100	116,080,859
1927 ...	29,668,370	81,433,200	111,101,510
1928 ...	39,138,092	62,067,200	101,205,292
1929 ...	29,098,000	39,055,400	68,153,400
1930 ...	40,126,629	19,378,238	59,504,867
1931 ...	40,865,298	24,946,800	65,812,098
1932 ...	27,143,112	12,758,300	39,901,412

The visible supply of grain in the port on April 1st, 1933, was 1,179,000 bushels, a decline of 3,267,000 bushels, or 74 per cent., as compared with April 2nd, 1932.

Visible Supply (Bushels).

	April 1 1933	April 2 1932	Net Change Amount	Per Cent.
All Grain	1,179,000	4,446,000	—3,267,000	—73·6
Wheat	226,000	4,317,000	—4,091,000	—94·8
Barley	—	67,000	—67,000	—100.0
Corn	383,000	1,000	+382,000	+38,200·0
Oats	26,000	29,000	—3,000	—10·3
Rye	544,000	32,000	+512,000	+1,600·0

Exports of domestic and Canadian grain from the Port of New York for the three weeks ending April 8th, 1933, amounted to 229,000 bushels, as compared with 3,953,000 bushels for the period last year, representing a decline of 94 per cent.

Exports of Grain at Port of New York.

	Three Weeks ending April 8 1933 Bushels	April 9 1932 Bushels	Net Change Amount Bushels	Per Cent.
Domestic and Canadian Grain	229,000	3,953,000	—3,724,000	—94·3
Domestic Grain	22,000	2,168,000	—2,164,000	—99·0
Canadian Grain	207,000	1,785,000	—1,578,000	—88·4

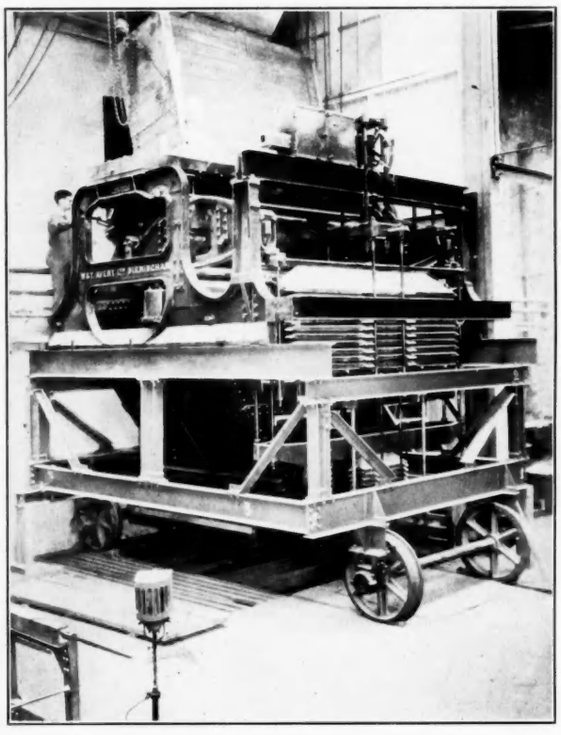
Exports of grain have been decreasing since the first of the year, the lowest weekly volume being 31,000 bushels in the week ending March 25th. The total volume of grain exports for the first 14 weeks of the year—January 1st to April 8th—was 5,933,000 bushels as compared with 12,314,000 bushels in the corresponding period last year, a decline of 52 per cent.

Exports of Grain at the Port of New York.

	January 1st to April 8, 1933 Bushels	April 9, 1932 Bushels	Net Change Amount Bushels	Per Cent.
Domestic and Canadian Grain	5,933,000	12,314,000	—6,381,000	—51·8
Domestic Grain	484,000	3,816,000	—3,332,000	—87.
Canadian Grain	5,449,000	8,498,000	—3,049,000	—35·9

Handling Grain at a Canadian Port

For some time at one point in the grain-handling plant of a Canadian port, the delivery of grain into and ex ship had not been entirely satisfactory so far as out-turns were concerned, owing to the difficulty of obtaining the high speed in unloading combined with accuracy in weighing.



The solution of the problem was found to be the installation of two Avery automatic grain weighers located at a point where there is a marine tower (shown in the photograph reproduced) designed for loading and unloading on both sides of the jetty simultaneously, i.e., there is a marine leg bucket elevator on each side of the jetty, each with a maximum lifting capacity of about 24,000 bushels of wheat per hour, or 720 short tons of 2,000 lbs. each.

On the basis of this capacity Avery are installing two No. 41 automatic weighers each with a capacity of 12,000 lbs. of wheat per discharge, and discharging twice a minute. This equipment will handle a total of 48,000 bushels of 1,440 tons per hour, and so amply take care of ordinary requirements.

Each machine is equipped with the following patented improvements:—

(1) Power operated ticket printing residue weigher.
(2) Duplicate weight printer.
(3) Feed control.
(4) Dribble screen.
(5) Automatic compensator.
(6) Shock absorbers.
(7) Instantaneous balancer.
(8) Dust protection.

The accuracy of the machines is .05 per cent. of the load in excess or deficiency.

These machines are worthy of note as being the largest automatic grain weighers in the world—another Avery record—the largest Avery machines hitherto made had a capacity of 4 tons per weighing, as compared with the present machines of 6 tons each.

Bombay Port Trust

The following are the imports and exports at the Port of Bombay:—

	1932 Quarter ended 31st March Import Tons	Export Tons	Total Tons	1933 Quarter ended 31st March Import Tons	Export Tons	Total Tons
Docks ...	479,831	490,252	970,083	449,838	479,734	929,572
,, (trans-shipment)	15,081	30,686	45,767	18,039	34,364	52,403
Bunders ...	318,486	96,196	414,682	281,125	93,120	374,245
Total ...	813,398	617,134	1,430,532	749,002	607,218	1,356,220
Total for year ended 31st March	2,799,092	2,323,003	5,122,095	2,783,896	1,905,338	4,689,234

Vessels other than ferry steamers, hired transports, Government vessels and country craft, which entered the Port of Bombay:—

	Quarter ended 31st March, 1932 No.	Net Register Tonnage	Quarter ended 31st March, 1933 No.	Net Register Tonnage
Vessels engaged in foreign trade ...	223	984,699	216	1,000,993
Vessels engaged in coasting trade ...	652	566,969	706	596,731
Total for year ended 31st March ...	2,819	5,250,077	2,988	5,777,644

Notes of the Month

The Kusten Canal.

It is reported that a grant of 1,100,000 Rm. has been sanctioned as eighth instalment for the Kusten Canal by the Reichswasserstrassenbeirat, from the budget for the fiscal year 1933-34, under "isolated expenditure." In the explanatory declaration of the Administration it is stated:—

"The works will be continued according to plan and completed on the Prussian stretch from the provincial boundary to Goldfischdever in the year 1933. The sum of 8,865,000 Rm. remains in abeyance."

Of the sum held over of 8,800,000 Rm., four million are no doubt to be deducted as part of the 500,000,000 Rm. emergency work programme of the Reich. The remaining 4,800,000 Rm. are probably for building of bridges, etc., or sums that are to be repaid to Oldenburg and Prussia by the Reich, and must therefore go through the Reichs Budget.

The plans provide for a breadth of water of 27 metres. The depth of the water is to amount to about 3.50 metres, so that canal vessels up to 750 tons—as on the Dortmund-Ems-Kanal—can travel on this stretch.

A road bridge is necessary on account of the connection into the Ems. This bridge will have to cross the railway line Emden-Rheine, south of Doerpen. Furthermore, four road bridges and some smaller bridges for paths will be necessary, orders for which have not yet been given. The railway and road bridges will be more than 40 metres long.

New Type of Excavator.

There was demonstrated at Tarleton recently a new type of excavator, which is equally serviceable for land and water operations. This excavator was specially designed after discussions between the assistant land drainage engineer of the Lancashire County Council and Messrs. Priestman Bros., Ltd., of Hull. It may be operated from the dry land or from a sectional pontoon specially adapted to take a land dragline excavator and convert it into a floating dredger with a grab. This pontoon, which is of the ramp-ended open type, is built in six floatable sections, and the excavator itself, temporarily transformed into a crane, lowers the sections separately into the water, where they are bolted up. After the dredging grab has been fitted to the machine in place of the dragline scoop, it travels on to the pontoon under its own power. The conversion from a land dragline excavator into a floating grab dredger can be completed in a day. When the machine was in position the total draught was about 2-ft., leaving 2-ft. 6-in. freeboard. On the change of the tide the dredger was released from its moorings, and it floated into midstream, where a demonstration was given of the grab dredging clay from the bed of the river.

Shipowners Favour Avonmouth.

The imports of grain into the Port of Bristol for the first six weeks of the present financial year show an increase of nearly 40,000 tons when compared with the corresponding period last year. The grain handling equipment available is of the most modern type, and this is reflected in the fact that that Avonmouth is often linked with the "quick" Continental ports in the matter of lower freight quotations. Upwards of a million tons of grain and feeding stuffs are imported each year through the Port of Bristol.

Grain Shipping Activity at Vancouver.

Grain shipments at the Port of Vancouver in February attained record figures (10,035,654 bushels), and exports during the current crop year to date (68,049,318 bushels) have been far in advance of those last season. The great bulk of the shipments have been going to United Kingdom and Continental ports.

Of this year's total grain shipments, 58,502,270 bushels went to the United Kingdom or Continental ports, 8,806,664 bushels to the Orient and the balance to other countries.

There has been a marked increase in apple shipments through Vancouver and other British Columbia ports, the total for the season down to February 18th having reached 701,025 boxes, as compared with 150,603 boxes to the corresponding date last season.

A trial shipment of British Columbia fir doors is going forward to the United Kingdom, and it is expected that an important trade will be opened up.

Weser Inland Shipping in March, 1933.

During the first quarter of 1933, without counting the fortnight's blockage through ice, on the Upper Weser about 50 days and on the Middle Weser 29 days were insufficient for full loading. Water conditions, therefore, compared with the first quarter of 1932, were considerably more favourable, for at that time it was not possible to load the vessels fully for two and a-half and two months respectively.

Goods traffic through the Bremen Weser Lock in March amounted to 95,000 tons down-stream, against 61,700 tons in February, in which, however, there were only 25 shipping days; there passed up-stream 32,000 tons, against 36,100 tons. This upward movement was chiefly caused by larger part cargoes of gravel, stones, coal, potash and salt—further, after a long interval, a large quantity of cement; up-stream more grain was loaded (with importation from the seaboard this concerns mostly German grain), to which were added shipments of pyrites and phosphate into the interior. Compared with March, 1932, up-stream traffic was greater by 26,400 tons, equal to 38 per cent., and down-stream by 5,500 tons, or 21 per cent., so that there was an increase altogether in both directions of 31,900 tons, or 33 per cent.

Comparison with the first quarter of the previous year, thanks to the comparatively favourable March result down-stream of 205,200 tons, shows an increase of 28,800 tons, or 16 per cent. Chiefly gravel and stones have increased (plus 16,600 tons), coal (plus 8,400 tons), piece goods (plus 7,000 tons). Potash and salt did not quite reach the previous year's figure, and only a small quantity of grain arrived. Up-stream quantity of goods was 78,200 tons. That is 5,500 tons, or 7 per cent. more. Against a decrease in grain (from 25,800 tons to 12,700 tons, equal to more than 50 per cent.) and flour (—5,800 tons) to counterbalance, is an increase in piece goods (plus 12,900 tons) and timber (plus 4,500 tons), added to which are potash and pyrites transports, which did not take place in the previous year. For both directions together with 283,400 tons, an increase is shown of 34,200 tons, or 14 per cent., however, compared with the first quarter of 1928 for instance, when the quantity of goods amounted to 607,000 tons, there is a falling off of 323,600 tons, or 53 per cent.

The Port of Amsterdam

The position of the Port of Amsterdam can be seen from the following figures in regard to number of vessels and tonnage and to the goods traffic arrived and sailed, as compared with the corresponding figures of last year.

SEAGOING VESSELS AND TONNAGE.

		ARRIVALS				SAILINGS			
		No.	Per Cent.	N.R.T.	Per Cent.	No.	Per Cent.	N.R.T.	Per Cent.
April	1932	255		371,069		271		383,757	
,,	1933	249		333,242		250		329,689	
		—6	—2·35	—37,827	—10·19	—21	—7.75	—54,068	—14·1
March	1933	275		411,809		279		433,463	
April	1933	249		333,242		250		329,689	
		—26	—9·45	—78,567	—19·08	—29	—10·39	—103,774	—23·94
Jan.-Apr.	1932	1,075		1,594,419		1,095		1,644,125	
,,	1933	1,037		1,494,155		1,039		1,521,656	
		—38	—3·53	—100,264	—6·29	—56	—5·11	—122,469	—7·45

SEAGOING GOODS TRAFFIC
(In Tons of 1000 Kilos*).

			1 Import	2 Transit incl. in col. 1	3 Export	4 Transit incl. in col. 3	5 Total col. 1 & 3
March	1932	...	287,710	51,218	114,526	27,671	402,236
,,	1933	...	313,182	79,857	168,817	57,696	481,999
			+25,472	+28,639	+54,291	+30,025	+79,763
			+8·85%	+55·92%	+47·40%	+108·51%	+19·83%
February	1933	...	238,737	41,295	110,819	33,925	349,556
March	1933	...	313,182	79,857	168,817	57,696	481,999
			+74,445	+38,562	+57,998	+23,771	+132,443
			+31·18%	+93·38%	+52·23%	+70·07%	+37·89%
Jan./Mar.	1932	...	943,750	157,326	406,705	96,985	1,350,455
,,	1933	...	884,776	181,354	400,965	140,932	1,285,741
			—58,974	+24,028	—5,740	+43,947	—64,714
			—6·25%	+15·21%	—1·41%	+45·31%	—4·79%

*These figures have been taken from the monthly statistics of the Central Bureau, The Hague, Holland.

Classified according to the flag, the number of vessels which entered the Port of Amsterdam during April, 1933, was: Dutch, 133; Great Britain, 45; German, 36; Swedish, 9; Norwegian, 14; Danish, 3; French, 4; Spanish, 1; Polish, 1; Italian, 1; Belgium, 1; Russian, 1.

Vessels laid-up at Amsterdam: April 1st, 1933, 34 vessels, measuring 187,626 tons gross; May 1st, 1932, 53 vessels, measuring 269,348 tons gross; May 1st, 1933, 35 vessels, measuring 184,132 tons gross.

Scottish Harbour Notes

Progress in Reconstruction Work at Stornoway Harbour.

Good progress has been made with a large reconstruction scheme at Stornoway Harbour, but the Cromwell Street Quay was not quite completed in time for the opening of the summer herring fishing on May 10th. The full scheme of reconstruction and dredging is to cost £20,000. Two years ago the local Harbour Commissioners carried out a similar scheme at North Beach Quay at a cost of nearly £40,000, and it is hoped that when the summer fishing is over work will be commenced on the reconstruction of No. 1 Wharf at a cost of £23,000. When the work is completed Stornoway will have one of the best-equipped harbours in the country.

Dredging in East India Harbour, Greenock.

The steam dredger "Irvine," which has commenced dredging in the East India Harbour, Greenock, has considerable work ahead of her. The dredger has been hired by the local Harbour Trustees in order to restore the harbour to its original depth of 10-ft. below l.w.o.s.t., and, as considerable silting up of the harbour has taken place since it was last at that depth, there will be a large amount of dredging to be performed which, it is anticipated, will keep the dredger fully employed until about September. Last year the south quay of the harbour was reconstructed at a cost of approximately £7,500, while this year not only is the dredging being undertaken, but also the reconstruction of the south side of the eastern arm, the contract for which is in the hands of Messrs. John Adam and Co., of Crossmyloof, Glasgow. The total cost of reconditioning the two quays and dredging is likely to exceed £12,000. When the work now in hand has been completed the East India Harbour once again will be useful for the smaller vessels using the port, and will relieve the congestion which from time to time is experienced from such craft in the other harbours.

Meeting of Aberdeen Harbour Board.

In the minutes of the Works Committee submitted at a recent meeting of Aberdeen Harbour Board it was reported that a letter had been received from the Ministry of Labour stating that it had been decided to extend to the beginning of August the unemployment grant-earning period for the scheme for the reconstruction of the eastern portion of Albert Quay. The Minister, however, regretted he was unable to extend beyond March, 1933, the period during which grant of 100 per cent. of the loan interest will be payable. Approved expenditure incurred between that date and the date of completion (not later than August 1st) will, however, rank for grant at the rate of 50 per cent. of the loan interest for a period not exceeding 15 years. The Works Committee also reported having received letters from the National Federation of Master Painters in Scotland (Aberdeen Branch) and the Scottish Painters' Society (Aberdeen Branch) with reference to the Commissioners' workmen applying paint by spraying machines at the harbour sheds, and expressing the hope that the work would in future be done by bona-fide painters. The Committee, after consideration of a report by the Harbour Engineer, agreed to recommend that no change should be made in the present practice of using skilled labourers for the work.

Leith Docks Development Committee.

With reference to a recent meeting of Leith Docks Development Committee, Mr. George Guthrie (hon. secretary) states that the town councillors who are members of Leith Dock Commission have had letters sent them inviting them to take up the challenge to take part in a public debate concerning the question of whether local dock development is essential. The Committee maintain that development is urgently necessary to give employment and to attract trade to Leith, which, it is contended, should thus be the clearing house for the whole of Scotland's eastern seaboard. In addition, it is suggested that if, for example, schemes of direct shipment can be commenced between Australia and New Zealand and the Clyde, instead of through London, Southampton, or Liverpool, it is practicable for Leith to have a similar connection, and it is pointed out that Australia and New Zealand had recently been advertising their products in Edinburgh and Leith. Regarding the proposed debate, the Committee are of opinion that they are entitled (if the councillors referred to were unable to accept the challenge) to receive an acknowledgment of their letter as a matter of ordinary courtesy. The Committee have appointed a deputation to wait upon the Town Council.

Port of Southampton Topics

Southampton Docks Statistics for April.

Southampton Docks statistics for April have some "bright spots."

The number of vessels using the docks was again fewer than in the corresponding month of 1932, the total inward falling from 238 to 216 and the outward from 236 to 211, but there were increases in the gross and net tonnage returns.

Gross tonnage inward rose by 155,438 tons to 1,219,462 tons, and outward by 200,781 tons to 1,251,976. Net returns rose by 101,480 tons to 663,280 inward and by 113,815 tons to 676,130 tons outward.

Cargo imports slumped by 4,430 tons from 36,689 to 32,259, while exports declined by 3,916 tons—from 27,400 to 23,484.

Passenger returns, on the other hand, showed a welcome increase, from 13,228 to 17,400 inward and from 10,766 to 15,599 outward—a total increase of 9,005. Troops inward decreased by 3,422.

More Liners Calling at Southampton.

May was a month of special interest to Southampton because the United States Lines, the North German Lloyd and the Hamburg America Line brought into operation the plans recently made whereby their vessels will come up to a berth in the docks instead of embarking passengers in Cowes Roads on their west-bound voyages.

The first ship to do this was the "Manhattan," of the United States Lines, which berthed on May 4th, while the first North German Lloyd liner to use the docks under this scheme was the "Bremen," which called on May 14th. On May 19th the "Hamburg" inaugurated the calls to be made by the Hamburg America Line. In connection with the "Hamburg's" call it is interesting to note that she is the first vessel of the Hapag fleet engaged on the North Atlantic to use a berth at the port, for even in pre-war days the vessels were handled by tender. The "Hamburg" was alongside only 55 minutes.

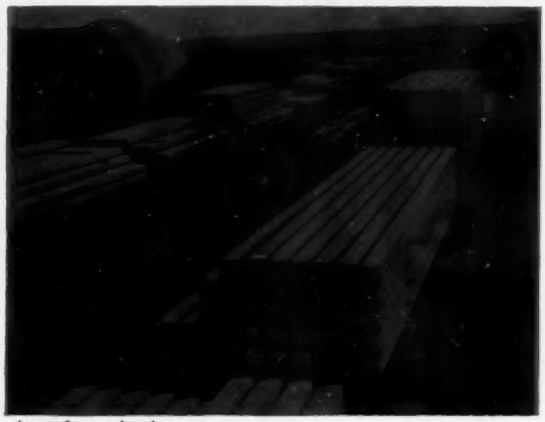
Under the new arrangement with the Southern Railway the liners will pay docking dues of 1½d. per net registered ton provided they remain at a berth no longer than three hours. Previously there was a 2½d. rate for vessels not remaining more than six hours and a 3½d. rate for nine hours.

In all, eleven well-known liners will come to the docks in pursuance of the new arrangements, and they will pay, according to the visits at present scheduled for this year, nearly £5,000 in Southern Railway dues and about £2,300 in Harbour Board dues. This total figure of about £7,000, however, does not represent a clear increase, for the reason that when the ships were handled by tender they paid various charges. Those embarking passengers in Cowes Roads paid ½d. per net registered ton in dues to the Southampton Harbour Board.

Flour Mill and Silos to be Constructed on Reclaimed Land at Southampton.

Work on the construction of the big flour mill and silos to be built for Joseph Rank, Ltd., on two acres of reclaimed land on the Western Shore, Southampton, is to begin immediately. The contract for the job—a valuable one—has been placed with Sir Robert MacAlpine and Sons, the famous firm of contractors who were entrusted with the work of building the 7,000-ft. of new deep water quay wall to be furnished under the two first stages of the dock extension scheme. The greater part of the berthing accommodation is now complete, and if calculations regarding the mill prove accurate, the contractors will be in a position to hand over the series of buildings nine months from now.

The new mill will be the first building erected for an outside firm on the mudland reclaimed under the extension scheme.



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VAR GOD ARE ROPA "THE DOCK AND HARBOUR AUTHORITY" NAR ANNONSORERNA TILLSKRIFVAS.

Irish Harbour Matters

Waterford

Waterford Harbour Board.

AT the annual meeting of the Waterford Harbour Board the Mayor, Councillor M. Cassin, was re-elected chairman; Mr. J. V. A. Spencer was re-elected vice-chairman. Following the usual practice, all the members of the Board were elected on the Standing Committees.

The auditor's report and statement of accounts, which had been circulated amongst the members and discussed in committee, was adopted.

Alderman Denis E. Burke, Clonmel, was elected to fill the vacancy caused by the death of his father, to the memory of whom the chairman paid a warm tribute.

Galway

Galway Harbour Bill.

The report of the Free State Department of Finance on the Galway Harbour Bill, 1933, suggests a number of alterations in the Bill as presented. Clause 46 of the Bill, it is pointed out, would have the effect of postponing the discharge of the arrears on the Commissioners of Public Works loan, as it permits of the excess harbour revenue being diverted to other purposes and gives the arrears the status of a loan. It is suggested that the clause should be withdrawn and a provision substituted, constituting the amount of the arrears outstanding at the date of the passage of the Act a first charge against the moneys raised by the Harbour Commissioners under the powers conferred on them elsewhere in the Bill.

Clause 60 is regarded as unsatisfactory owing to the wide discretion it seeks to give the Commissioners in the matter of granting pensions. If a superannuation clause was considered necessary, it should follow the lines of the Limerick Harbour Act, 1926.

Limerick

Cutting of First Sod in Limerick Scheme.

The first sod of the Limerick Dock extension scheme, which, when finished, will have cost over £100,000, was cut by the Mayor of Limerick (Alderman Donnellan) on May 16th. The scheme, when first drawn up, aimed at a much larger work. The plans and specifications, if accepted, would have meant the expenditure of a much greater sum, but because the Government would not give the necessary approval, the project had to be dropped. Limerick, however, refused to stand still, and decided to proceed with the smaller scheme, the work upon which has already begun, and will afford considerable employment for some time to come. The extension will run for 550-ft. along the existing dock. It provides for a width of 463-ft., and can take ships of 22-ft. 6-in. draught—sufficient for Limerick's needs.

Mr. T. J. Moran, of Dublin, the contractor, presented the Mayor with a silver trowel, with which the first sod was lifted and carted away with fitting dignity. The ceremony took place on a piece of waste ground outside the city, a short distance from the Treaty Stone.

Mr. John McCormack, the chairman of the County Council and a member of the Harbour Board, said that Limerick, like other seaport towns, depended on its imports and exports. The country had its share of depression, but while that good times were around the corner, they must take care that the ships coming to their harbour did not leave in ballast.

Mr. Moran described the position of Limerick as unique. It was the outlet for the products of the Golden Vale, "one of the most profitable spots on the wide earth," and besides the port served a wide area. He felt that the number of unemployed in the city was the backwash of the Shannon scheme. In this scheme they hoped to absorb some of the unemployed men.

The Mayor of Limerick paid a tribute to Deputy R. Keyes who, when he was Mayor, took a keen interest in the scheme. The Harbour Board, seeing that the earlier scheme did not materialise, now went ahead on their own responsibility.

Mr. E. Stephenson, President, Limerick Chamber of Commerce, asserted that this £100,000 scheme was not too big for the city.

Deputy Keyes said that the scheme was a gesture of confidence that would be amply justified by Limerick's future.

Aden Port Trust

The following are the returns for the month of March, 1933, of shipping using the port:—

	No.	Tonnage
Merchant Vessels over 200 tons ...	121	522,845
,, ,, under 200 tons ...	5	810
Government Vessels	9	22,935
Dhows	129	5,468
PERIM.		
Merchant Vessels over 200 tons ...	24	77,848

The total value of imports excluding Government stores was Rs.47,94,000, as compared with Rs.55,83,000 for March, 1932, and of exports Rs.30,81,000, as compared with Rs.33,47,000.

The total value of both imports and exports together was Rs.78,75,000, as compared with Rs.89,30,000.

Imports during the month were above those for March, 1932, in the case of grain, pulse and flour, hardware, seeds, skins (raw), tobacco (unmanufactured and manufactured); and below in the case of coffee, gums and resins, hides (raw), sugar, piece goods (grey, white and printed or dyed), twist and yarn, and treasure (private).

Exports were above those for March, 1932, in the case of coffee, grain, pulse and flour, hardware, skins (raw), piece goods (grey, and printed or dyed), twist and yarn, tobacco (unmanufactured and manufactured); and below in the case of gums and resins, hides (raw), seeds, sugar, piece goods (white) and treasure (private).

TRADE OF THE PORT.

Article.	Unit	Imports.		Exports.	
		Quantity.	Value Rs.	Quantity.	Value Rs.
Coal	Tons	5,092	91,784	0	0
Coffee	Cwts.	11,537	3,93,818	8,348	3,38,759
Grain, Pulse and Flour	,,	70,291	3,15,471	37,340	1,63,893
Gums and Resins	,,	2,919	43,784	3,040	58,892
Hardware	—	0	27,290	0	26,546
Hides, raw	No.	3,040	2,572	4,617	3,945
Oil, Fuel	Tons	52,046	13,01,100	0	0
,, Kerosene	Gls.	42,184	28,699	5,700	3,905
,, Petrol	,,	20,325	20,400	965	1,240
Salt	Tons	0	0	14,206	1,53,682
Seeds	Cwts.	7,356	42,101	1,158	11,045
Skins, raw	No.	425,398	2,11,450	631,760	4,23,085
Sugar	Cwts.	17,000	95,708	13,803	79,377
Textiles—					
Piece Goods, Grey	Yds.	3,333,856	4,36,886	4,300,005	5,62,901
,, ,, White	,,	410,439	74,093	348,082	51,810
,, ,, Printed or Dyed ..	,,	832,380	1,79,970	1,375,289	3,04,342
Twist and Yarn	Lbs.	140,900	61,446	223,318	1,01,822
Tobacco, Unmanufactured ...	,,	621,936	82,012	919,772	1,45,134
,, Manufactured	,,	96,880	63,684	28,952	24,799
Other Articles	No. of Pkges.	67,892	10,12,142	26,161	4,22,335
Treasure, Private	—	0	3,09,905	0	2,03,270
Total ...	—	—	47,94,315	—	30,80,782

The number of merchant vessels over 200 tons that used the port in March, 1933 was 121, as compared with 127 in the corresponding month last year, and the total tonnage was 523,000, as compared with 538,000.

Excluding coal, salt, fuel oil and military and naval stores and transhipment cargo, the total tonnage of imports in the month was 10,600, and of exports 6,700, as compared with 9,400 and 5,600 respectively for the corresponding month last year.